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THE
NORTH AMERICAN
MEDICAL AND SURGICAL
JOURNAL.

PUBLISHED UNDER THE AUSPICES OF
The Kappa Lambda Association of the United States.

NON DOCTOR, SED MELIORE IMBUTUS DOCTRINA.

VOL. XI.
JANUARY AND APRIL.

Philadelphia:
JAMES KAY, JUN. & CO.—No. 4, MINOR STREET.
1831.

Philadelphia :
Printed by James Kay, Jun. & Co.
Printers to the Philadelphia Medical Society,
No. 4, Minor Street.

Medical

NOTICE

TO

READERS AND CORRESPONDENTS.

THE modification of the plan of this Journal, adopted during the last year, is now rendered complete. The first and larger portion of the work will in future consist of Reviews: the second and concluding part, under the head of Quarterly Summary, will contain, in addition to the selections, translations and digests from contemporary Journals, communications of whatever is new and valuable in the practice of our friends and correspondents; nor will our own observations and experience be withheld when they shall be found to possess sufficient interest to entitle them to publicity. Arranged under the heads of the several departments of medical science, Original Articles will, by the company in which they are placed and the intimate connexion between them and the foreign articles, insure even a more ready and pleasurable perusal, than when occupying a distinct place in the Journal. Owing to the smallness of the type in which they are printed, we can introduce more matter in smaller compass, and allow ourselves still more space for reviews. It will be seen that, independently of the advantages of this arrangement, we have also increased the number of pages; so that we can now promise our readers an extent and variety of information, which will, we hope, prove adequate to satisfy their laudable curiosity, by

keeping them apprized of the progressive improvement of our common profession.

Our Publishers request us to apologize for the delay in the appearance of the present number. Sickness and change of printing offices, together with some minor obstructions, are urged by them, as extenuating circumstances on the occasion. Their well known business habits, and positive assurance that the like postponement shall not occur again, will, we hope, serve to inspire our readers, as they have done ourselves, with entire confidence in their punctuality for the future.

Insertion of Reviews of the following works has been deferred for want of room. They will appear in our next number.

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M'CULLOCH on Remittent and Intermittent Diseases.

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WAS FOUNDED BY
JAMES GARRISON

WAS OF THE

JANUARY

PRINTED BY
J. G. BROWN

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JANUARY 1831.

ART. I.—MEDICAL INSTITUTIONS OF NAPLES.

Osservazioni sopra il celebre Stabilimento D'Aversa nel Regno di Napoli e sopra Molti altri spedali d'Italia destinati alla Reclusione e cura de' Pazzi, con alcune considerazioni sopra i perfezionamenti di che sembra suscettivo questo genere di Stabilimenti. Opera del Dottor DOMENICO GUALANDI, Medico direttore de' Dementi nello spedale di S. Orsola in Bologna, &c. &c. 8vo, Bologna, 1823.

IN the last number of this journal we undertook to present to our readers a description of the medical institutions of Naples, and hoped to complete, in this article, the consideration of the schools and hospitals of that city, in order to pass, in the present number, to the examination of other points connected with our subject. Much, however, to our surprise, and we do not hesitate to acknowledge to our regret, the subject proved so extensive, and our materials so copious, that instead of being able to comprise the full account of the establishments to which we have alluded in the number of pages

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usually allotted to a single article, we were forced to divide it into two parts. The present is therefore offered as a continuation of the preceding, and will complete what we have to say in relation to the hospital and *hospices* of the Neapolitan metropolis.

We commence with the *Ospedale dell' Annunziata*, or the foundling hospital. This establishment was founded in 1304, by Nicholas and James Scondito, richly endowed by Sancia, the wife of king Robert, in 1309, and greatly enlarged by queen Joanna the Second, in 1348. The building presents an imposing appearance, and is large in all its dimensions. The latter circumstance, indeed, owing to the objects for which the house was erected, was indispensable; for the hospital may be regarded as a triple institution, one part of which is destined for the accommodation of the foundlings and their nurses; a second, as an infirmary for such of the former as are affected with disease; while a third is reserved for the reception and maintenance of all the girls who have been received during their infancy in the establishment, and have been fortunate, or perhaps unfortunate enough, to survive.

The establishment for the foundlings, and the hospital attached to it, contained, in the year 1828, several hundred infants, the majority of whom were sick, or slightly indisposed. They are arranged in wards of great dimensions; one of which can easily accommodate between one and two hundred infants, together with their nurses. Each of these women has two children under her charge, placed in a cradle situated near her bed. The whole establishment is wretchedly kept. The wards, and particularly the smaller ones, are but very imperfectly ventilated, and emit a very disagreeable smell, increased and maintained by the practice of keeping the windows closed, even in moderate weather. This practice should, we think, be reprobated every where, and must be regarded as particularly useless at Naples, and in many other parts of Italy, where, in consequence of the system of bandaging the bodies of infants from head to foot, and covering their bodies and heads very warmly, the only parts that could possibly suffer from the freest admission of cold air, would be the face and lungs; an inconvenience that might easily be guarded against. It is a matter of astonishment and regret, that the plan adopted in our

own country, and in some of the northern parts of Europe, in relation to the manner of rearing children, should not ere this have been imitated in the fine country whose medical institutions form the subject of our present investigations; and that its inhabitants should still cling with pertinacity to their old prejudices, in relation to the advantages of bandages or swathing clothes; the danger of a free admission of pure air into the apartments of infants; as well as of frequent ablutions. In the south of Europe the idea is almost universal among the lower classes, and but too prevalent among the higher, and, we would imagine, the better informed orders of society, that the practice now pursued of swathing infants,—of covering them with piles of warm clothes, even in the mildest weather, and keeping them confined, particularly when very young, in close rooms, is the only rational and safe one that can be suggested. We have often seen the nurses of foundling hospitals in Italy stare at the simple mention of the plan pursued among us, and we were accused, by mothers and fathers in the higher circles, of barbarity, for allowing an infant's body to remain unswathed, and for putting simple socks on its feet, and a light covering on its head. It is not to be supposed, however, that such prejudices still prevail among the members of the profession in the south of France and in Italy. With few exceptions, they understand, as well as we do, the proper rules to be pursued in the physical education of children. It is among the people that such antiquated notions exist; and until they are eradicated, there is little chance of another, and more advantageous system being substituted for the one now in favour. With respect to Naples, it would appear that it is time a different plan should be pursued in reference to the management of the infants received at the hospital *Dell' Annunziata*; for the success of the present one has not heretofore proved very encouraging, as may readily be inferred from the fact, that out of 2500 children received annually in that establishment, one-third die before they have progressed beyond the period of infancy*.

* In his *Medical Statistics* Dr Hawkins states, that the mortality at this hospital is one in five. We do not know where Dr H. procured his information. Ours was obtained at the hospital itself, in 1828. Great, however, as a mortality, among infants, of thirty-three per cent, may appear, it is still far short of that

Be this, however, as it may, almost every traveller who has visited the establishment in question, has adduced his testimony in support of the opinion we have advanced relative to the imperfect manner in which it is kept. Dr Otto, in the narrative of his medical tour through Europe, expresses himself in positive terms on the subject, affirming, that the hospital *Dell' Annunziata* is the worst managed in Naples; and stating that the air of the wards is so corrupted, that its impurities can be perceived even in the outer court.

With regard to the third department of this institution, it will be sufficient to state, that it is denominated *Conservatorio*, and consists of large wards containing a considerable number of beds. The wards are kept clean and neat; much more so, indeed, than is usually found to be the case at Naples. They are defective, however, from the light and air they receive being admitted almost exclusively through the doors placed at the extremities. The conservatorio is destined to receive all the girls admitted during infancy in the establishment, and who have attained to seven years of age. There is a small infirmary near the main ward of this department of the *Annunziata*, where such of the girls as are sick, are placed. The boys who have attained the same age (seven years), are sent to learn trades, or to the *Albergo dei Poveri*; but mostly to some of the convents of the city or neighbourhood, where they receive some education at the expense of those establishments, and either embrace religious orders, or, as more seldom happens, leave these to engage in some branch of trade. The girls, while in the conservatorio, are taught trades suitable to their sex, and various branches of elementary education. They remain there until sent out to service or trade, or until they are married, in which case they receive a small dowry.

The hospital we are now describing is situated in a part of the city denominated *Della Forcella*, beyond the *Porta Nolana*, and at some distance from the central and more crowded quarters of this immense metropolis. But though in that respect it possesses some advantages over the *Incurabili* and other hospitals we have already noticed, still it is not free, notwith-

which is noticed at Palermo, where, in 1823, out of five hundred and ninety-seven infants received at the hospital, four hundred and twenty-nine died; being in the proportion of seventy-two per cent.

standing its comparatively retired location, from certain defects dependent on the narrowness and crowded population of the streets by which it is surrounded ; a circumstance which, combined with others already mentioned, tends to deprive it of that full supply of pure and wholesome air, so indispensably necessary in establishments of this kind.

The hospital of *San Francisco*, situated beyond the *Porta Capuana*, is a large establishment destined for the accommodation of sick prisoners of both sexes. Its foundation is due to the viceroy Juan Zanica, duke of Pietrapersia, and must be regarded as not the least advantageous among the acts of the government of that nobleman ; since, before his time, the sick prisoners were kept in the state prison, *La Vicaria*, which was crowded to excess, and rendered highly insalubrious by the intermixture of the sick with the healthy. The hospital of *San Francisco* is sufficiently large to accommodate four hundred patients. The females are placed on the first floor, and the men on the second and third ; the basement story being reserved for household purposes. The building has more the appearance of a jail than of an hospital, and partakes of all the defects incident to Italian prisons generally ; being ill ventilated ; noisy, and filthy in the extreme. It is here that the insane are sent on trial previous to their being transferred definitively to the asylum of Aversa. But of this we shall have occasion to speak more in detail when on the subject of this once celebrated institution.

The *Ospedale Santa Maria della Fede*, situated in the suburb of the *Porta Capuana*, and beyond the establishment we have just noticed, is comparatively small, being capable of accommodating little more than one hundred patients. It is under the immediate direction of the police, and reserved for the admission of prostitutes labouring under the venereal disease. Without doubt it is the most disgustingly filthy public establishment of the kind, to be met with anywhere, and is scarcely a degree better, in point of nicety, than our common hog-pens. Its wards are irregularly distributed, imperfectly ventilated, poorly furnished, and dreadfully kept. One would be almost inclined to believe that this establishment is the place of rendezvous of a large portion of the fleas and other vermin of the kingdom of Naples, and every one who has

travelled in that beautiful country knows, from personal experience, that the quantity of these is greater there, than perhaps in any corner of the civilized world,—Spain always excepted.

The Hospital *Santa Maria della Fede* is divided into several departments. Thus, there is a ward denominated *Seraglio*, to which are consigned all the prostitutes who, though free from disease, have neglected to present themselves for the purpose of submitting to the inspection which all public women must undergo, and are punished for thus violating the police regulations, by confinement during several days. Another part of the house is occupied by those women, who, in addition to the disease for which they are admitted, are affected with some febrile complaint. A third is reserved for those who are undergoing a course of mercury. Finally, another part of the house is appropriated to the accommodation of those who, having repented of their mode of life, are making preparation for entering a house of penitence or a convent. This department is the least objectionable, in point of neatness, of all those into which the hospital is divided; but it is the smallest, and, with a few honourable exceptions, appears to be inhabited by the oldest and the ugliest of the inmates.

The present hospital is well situated for the convenience of those who constitute its population; it is in the very centre of the most demoralized part of the city,—every street leading to it being inhabited exclusively by the lowest class of prostitutes. They have, therefore, but one step to make from their dwelling to the hospital, and vice versa. But while the police has thus shown some attention to the convenience of the fair inhabitants of *La Fede*, the military authorities do not appear disposed to allow the soldiers of the garrison to show off their gallantry by paying their devoirs to these syrens; for sentinels are placed at the entrance of all the streets leading to the hospital, in order to prevent any individual wearing uniform from passing into them, and having intercourse with their female inhabitants:—with what success, we shall be able to form some idea, when on the subject of the military hospitals of Naples.

With a view to guard against the diffusion of the venereal disease, the government employs several physicians or surgeons to examine, a certain number of times a month, all

prostitutes registered at the police office. For this purpose, they are assembled together in numbers, more or less considerable, and such among them as are discovered to be sick, are sent to the hospital. This method, which is analogous, in many respects, to that adopted and found advantageous in other countries of Europe, is far, however, from proving very successful at Naples, owing to causes very little creditable to those charged with putting it into operation. Thus we were assured, by individuals well informed on the subject, that the service in question, like many others, indeed, at Naples, is very imperfectly performed—it often happening that prostitutes, particularly those of the more elevated orders, request the examining physician to give them, though sick, a certificate of health, which of course exempts them from confinement at the hospital, with the promise that he shall have their custom and be paid for his services. This is too readily agreed to, and these girls, while under treatment, continue to receive the embraces of unsuspecting individuals to whom they communicate the disease. With these facts in view, we cannot refuse to conclude, that the government is not so much to blame as the *employés*, unless, indeed, it be for not selecting, to fill the situation of inspectors, men whose integrity may be depended upon, and for not keeping an eye on those employed, and enforcing the laws on all who are guilty of a breach of trust.

We shall have occasion to speak of the method employed at Naples in the treatment of the venereal disease, when on the subject of the state of medical practice in that city.

The next hospital which deserves our notice, is denominated *Ospedale dei Pellegrini*. It is a small but neat establishment, situated in a populous part of the city. It belongs to, and is under the special charge of, the confraternity of the Pellegrini. In this hospital are admitted individuals of the male sex who have met with accidents; the females being sent to the *Incurabili*. Every possible care is bestowed on, and the necessary treatment afforded indiscriminately to all those who are brought in. The medical attendants consist of one physician, four principal and ten or twelve assistant surgeons;—a goodly number, considering that in the whole hospital there is only one ward open for the accommodation of the sick, the number of

whom must consequently be very limited—amounting to not more, we believe, than from twenty to thirty. In return, the church, the lodging and eating rooms of the officers of the house, as well as of the attendants, occupy a considerable part of the edifice. The former is rich and well ornamented; while the latter are commodious and spacious. In this establishment are (or rather were formerly) also received pilgrims or poor strangers, who are fed, clothed, and lodged at the expense of the order.

It is really a matter of surprise, that so small a hospital for accidents should suffice in a city so large and populous as Naples. The hospital *Della Consolazione* at Rome, the objects of which are similar to those of the present institution, is sufficiently large to contain about 200 patients, and is generally full. Deduct about 80 from this number, for the amount of females contained in it, and we have a total of 120 males treated daily at Rome for accidents, which contrasts greatly with the amount we have stated as existing at the hospital *Dei Pellegrini*; and yet the population of Rome is inferior by more than one half to that of Naples, and the inhabitants of that city are calm and phlegmatic, compared with the Neapolitans, who are noisy, turbulent, and quarrelsome. Inexplicable, however, as these facts may appear, we were repeatedly assured that the hospital of the *Pellegrini* is large enough for the purposes to which it is applied.

There is at Naples, as at Rome, a hospital for the accommodation of convalescents. It is much smaller, however, than that in the latter of these cities, and is open only for the admission of individuals who have been treated at the hospitals *Degl' Incurabili*, *Della Pace*, and *Di S. Elicio*. Unlike what takes place at Rome, the time of residence in the establishment for convalescents is not fixed and limited to three days only, but may be prolonged as long as is required, to insure a perfect recovery. We were informed, however, by Professor Grillo, that although there is a separate establishment for the reception of convalescents, it is the usual custom to send these to their own houses, whenever they express a desire to that effect, and that those only who cannot do otherwise, consent to be sent to the institution in question.

There are four military hospitals in the city of Naples.

Of these, three are appropriated for the accommodation of the land troops, and the fourth to that of the sailors and marines of the royal navy. We commence with the former. The principal one among these is denominated *Ospedale della Trinità*, and is situated on a very high ridge, separating the mass of the city from the quarters of Chiaja, Pozzillipo, &c. Those who have visited Naples, and are acquainted with its topography, will form an idea of the position of this hospital, on hearing that it is placed on the highest point of the Strada Magno Cavallo, and on the road that leads to the castle or fort of St Elmo. From this it results, that the hospital *Della Trinità*, though in the centre of a populous part of the city, commands a magnificent prospect, and a full supply of pure and wholesome air. The building which, since the year 1806, has been made use of for the accommodation of sick soldiers, was, in olden times, a convent, and presents the very few advantages, and the many inconveniences uniformly discovered in buildings that have experienced metamorphoses of this kind. In front is a handsome terrace, ornamented with several rows of fine trees, under which the convalescents, who are allowed to resort to this place for promenade, find, during summer, a comfortable shade, which in this climate is indispensably necessary during warm weather, and often highly acceptable even in winter.

With respect to the internal arrangement of the hospital, it will be sufficient to remark, that it contains several long wards, rather too narrow, and about as well ventilated as those of Italian hospitals generally. The long and wide arcades or porticos, so commonly found in convents, have been converted into wards, by closing up the vacant spaces between the pillars. Besides these, there are several small rooms, principally fitted up for the accommodation of ophthalmic patients. The furniture of these wards is very indifferent in point of quality and appearance, while the cleanliness of the whole establishment, but particularly of the venereal department, is very defective. Indeed, throughout this extensive hospital there is but one ward worthy of notice. It is on the first floor, and is appropriated to surgical cases and recent accidents. This room was formerly the refectory of the monks. It is lofty, wide, well aired, and is paved with marble, arranged in

the manner of large mosaics. Sick officers are also admitted into this hospital, and are lodged in separate rooms fitted up for that purpose with a greater attention to neatness.

At the time we visited the hospital *Della Trinita*, it contained nearly nine hundred patients, of whom at least two hundred were affected with ophthalmia, and a number with venereal complaints. The garrisons of the neighbouring military posts, and particularly of *Gaeta*, furnish a great number of these ophthalmic inmates to the military hospitals of the capital, owing, it is supposed, to the chalky and disagreeably fine dust with which, in dry weather, the air of the country around Naples is impregnated, and to which the soldiers are continually exposed; as well as to the intemperate use of inebriating drinks; to the coldness of the nights succeeding to the heat of the days; to the reflection of the sun, which is very powerful; and, as some think, to contagion. A few years ago the disease assumed a purulent form, and was more destructive to the eyes than it is found to be at present.

The treatment adopted for the cure of this disease, by the surgeons of the house, does not present any thing peculiar or interesting, consisting, as it does, in leeching, sometimes bleeding, emollient applications, saline purgatives, and occasionally emetics. Dr Magliari, one of the surgeons of the establishment, and whom we occasionally attended in his morning visits, informed us, that in cases attended with much sensibility of the eye, he resorted with great advantage to the external application of belladonna; and that when there was considerable engorgement of the palpebral vessels, he cut them out.

A strange and expeditious method of administering medicines is adopted by some of the physicians and surgeons of this hospital. At their morning visits they are followed by a servant, carrying in one hand a large bucket full of a strong solution of purgative salts, and in the other a tumbler. The doctor prescribes, and the servant administers; the whole is the affair of an instant. It is to be remarked that saline purgatives appear to be favourite remedies with many Italian practitioners, and, as we should think, particularly so with those of the present hospital, by one of whom we saw them administered one morning, in the manner just alluded to, to at least

eight out of every ten patients he prescribed for. It is right to state, however, that the majority of these patients were afflicted with ophthalmia, and appeared to us to require the operation of remedies of the kind.

According to Dr Valentin, the medical officers of the hospital *Della Trinita* consisted, when he visited it, of Dr Gentile, physician in chief; M. Gabrielli, surgeon major; and Andrea Salomone and Stephano Trinchera, surgeons. Since that period, Dr Magliari, the learned, intelligent, and active editor of the *Osservatore Medico*, having been reinstated in the army, from which he had been removed at the period of the restoration of the present reigning family, has been appointed one of the surgeons to the institution.

The mortality in the hospital *Della Trinita*, as indeed in almost every other military hospital with which we are acquainted, is small, compared to that experienced in hospitals generally; not amounting, in ordinary times, according to some reports, to more than five per cent of the whole number admitted. In some seasons, however, as, for example, during the prevalence of epidemics, it has been found to exceed eight or nine per cent. Nor are the causes of this comparatively small mortality at the *Trinita* difficult to account for, consisting, as they do, in the natural healthfulness and robustness of the class of individuals admitted in that institution, and in the trifling nature of the complaints for which a large number of the patients are sent thither. A circumstance worth recording, and which, were it not for the respectability of the authorities on which it is reported, we should find some difficulty in crediting, is, that only one individual out of about forty dies of pneumonia or pleuritis, although these complaints are rarely combated by the lancet, but only by small doses of tartarized antimony, powdered digitalis, nitre, &c.

The second military hospital at Naples, in point of importance, is denominated *Del Sacramento*. Like the preceding, it is situated on high ground. It is much smaller, and can accommodate, at most, but three hundred patients. In general it does not contain more than one half this number. But neither this hospital, nor the third, which is called, from the place in which it is situated, *S. Carlos della Regina*, presents any thing relative to organization, distribution, or the method

of treatment adopted, deserving a particular notice in this place. We therefore pass to the consideration of the naval hospital.

This institution, which is undoubtedly one of the neatest and best administered of the kind in the city or kingdom of Naples, is situated in a part of the city denominated *Piede di Grotta*. It fronts the sea, in full view of Capri, and the other islands, and is at a small distance from the royal garden of *Chiaja*, in the *Villa Reale* on one side, and from the Grotta di Pozzillipo on the other. This hospital contains usually little more than two hundred patients, but is large enough to accommodate double this number. The basement story is reserved for the store rooms, offices, &c. while the wards are situated on the second and third floors. Those on the second are occupied by the galley slaves, who are sent hither from the arsenal whenever attacked with disease; and those of the third floor by the sailors and marines of the royal navy. The same care and attention are bestowed on the criminals as on the other inmates of the house, and we believe it would be impossible to distinguish them from the latter, were it not for the circumstance of their retaining their chains under the bed clothes. The wards are smaller than those of the other Neapolitan hospitals, and are placed parallel to each other, and in such a way as to extend from the street to the court. They are provided with large windows at both extremities, and consequently receive, throughout their whole extent, the full benefit of the refreshing and pure air from the sea. Independently of this, they communicate freely with each other laterally; an arrangement which, while it insures a more complete ventilation, was requisite for facilitating the service of the wards.

To this hospital are attached four physicians, four surgeons, and an equal number of assistants. The former consisted of Drs Capoce, Benevento, Folinea, and Del Guidice. Among the surgeons we need only mention Professor Grillo, one of the most judicious, learned, and amiable practitioners in Naples, and of whom we shall have occasion, we hope, to speak in a more particular manner on a future occasion.

It will not be necessary to enter, in this place, into any details relative to the method of treatment adopted by the physicians and surgeons of this hospital, in the management of the or-

dinary diseases they are called upon to combat ; as this method presents nothing, at least so far as we could notice or learn, very striking ; and, in fact, does not differ essentially from that pursued in the other hospitals, military and civil, or by the practitioners of the city generally. It will, therefore, be more appropriately examined when we come to take a general view of the state of medicine at Naples. We must, however, be allowed a few words on the subject. The medical attendants of the institution under notice treat their syphilitic patients agreeably to the ordinary Neapolitan method, which consists in pushing the use of mercury to a brisk salivation ; but in some cases they resort to the plan recommended by their townsman, Cirillo, in his *Osservazioni pratiche intorno alla Lue Venerea*, and which consists in the employment of the ointment of corrosive sublimate, in the form of frictions, to the soles of the feet.

We are not aware that their success is more satisfactory than that obtained elsewhere in the city. They are very fond, and in this respect resemble most of their countrymen, of the imitation of James's powders prepared by MM. Lancelotti and Peppe, two eminent chemists of Naples, who, as Dr Valentin affirms, have been more successful in the preparation of that remedy than had been Pulli, another pharmacist of the same city.

The military hospitals are well administered, and are placed under the direction of a council composed of a staff officer, two officers of inferior rank, and the physician and surgeon in chief of the army. Dr Valentin, who derived his information from the most authentic source, mentions, that the government allows only twenty grains (*granos*), equivalent to eighteen cents, a day, for each patient admitted into these institutions. This sum, small as it may appear, is generally more than sufficient to defray all the expenses ; a circumstance which all will readily conceive, who are aware of the cheapness of living at Naples.

Near the Royal Naval Hospital is situated the *Real Ospizio de Ciechi di SS. Giuseppe e Lucida* ; or, the Royal Asylum for the Blind. Though not, properly speaking, a medical institution, it deserves, as do also one or two others, to which we propose to call the attention of our readers, a brief notice

in this place. Like the naval hospital, it is situated in front of the bay, but is separated from the water by the beautiful garden of *Chiaja*, which extends a considerable distance along the margin of the sea. This noble and useful institution was founded on the 13th of December 1818, by the late King Ferdinand I., and principally through the exertion of Professor Quadri, for the admission of such of the poor as are deprived of the sense of sight. It was modelled upon a similar institution existing, for many years past, at Paris. Besides the blind, this institution contained, at its origin, the deaf and dumb; but, within a few years, these have been removed to the general asylum for the poor. The number of inmates amounted, in 1828, to about one hundred and fifty. The house is kept clean, and presents as much the appearance of comfort as could be expected or desired. Strange as it may appear to those who fully appreciate the advantages resulting from institutions of the kind, the one we are now noticing has lately lost much of its importance and usefulness, owing to the limited degree of patronage afforded to it by government. The younger part of the population of this house are taught reading, as at Paris, by feeling the surface of metallic types, and have some books printed in such a manner that the types, of larger size than ordinary, and unstained with ink, produce, on one side of the paper, a relief sufficiently bold to enable the pupil to distinguish the characters by the touch. Independently of reading, they learn geography, arithmetic, music, &c. When they attain a certain age, they are taught to make baskets and other articles of the kind, and, what is more extraordinary, to work and polish marble. As regards their proficiency in music, we do not hesitate to state, that it is exceedingly clever. We were present at a musical performance, given by a full band of these unfortunate youths, and were highly gratified at the neatness and precision with which they executed some of the finest and most difficult compositions of Rossini. When the deaf and dumb were included among the inmates of this institution, they were taught cabinet-making, and their blind comrades were employed as their assistants. By this means a double advantage was obtained: the inmates were kept busily employed, and an additional source of profit was insured to the establishment.

It is calculated that the daily expenses of each individual do not exceed one carlin (between eight and nine cents), every thing included. They are fed, (by contract), at five and a half grains each. For this small sum they are provided with soup twice, and wine, fruit, and bread once a day. Independently of this, they receive meat for dinner twice a week. We were assured that the number of *employés* was unnecessarily large : a defect too common in public institutions in the south of Europe. By diminishing it, an additional quantity of bread (for the portion now allowed to each individual is too small) might be given, and, perhaps, animal food could be more frequently indulged in. This establishment, constituting a dependency of the *Albergo dei Poveri*, is governed by the same administration, and is under the particular care of Sig. Angelo Petricca.

By a very natural transition, we pass to the description of the General Asylum for the Poor, the *Albergo dei Poveri*; or, as it is vulgarly called, the *Reclusorio*, or *Seraglio*. Without the least doubt, this establishment is one of the most magnificent in Europe—certainly the most magnificent in Italy, and does infinite honour to its founders, as well as to those by whom it has been supported and administered. In every sense, indeed, it may be regarded as well suited to the objects for which it has been established, and atones for many of the defects noticed in the other charitable houses of the city of Naples. That this is not exaggerated praise, will appear, we are confident, from the brief description we are about offering of the institution. We appeal, without fear, besides, to all travellers who have visited Naples, and have been at all inquisitive on subjects of public charities, for the correctness of what we have stated and intend to state, in relation to the *Albergo*, confident as we are that, even the most prejudiced against Italian institutions must be forced to change their tone respecting the one which forms the subject of the present remarks.

The *Albergo* was founded by, and the edifice appropriated to it commenced by order of Charles the Third, who selected for architect, on this occasion, the Chevalier Fuga. Though far from having, as yet, attained its full size, it constitutes one of the largest piles in existence. The external front, in 1828, was, as we were assured, 1300 feet in length, and was not

completed. It is four stories high, besides the attic, and is embellished, in front, with Ionic pillars. When finished, the building will form a perfect square, with four courts in the centre; the intention being to divide the open space included between the four sides of the edifice by transverse buildings. The central point of the open space is occupied by the chapel. These courts are large, and some of them are subdivided into several smaller ones, for the accommodation of the different classes of inmates. With the exception of small portions of the side wings, the front part of the building is the only one so far complete as to admit of being occupied. It is beautifully situated on rising ground, facing a large street called *Foria*, near the outskirts of the city, and on the road to Aversa and Rome. The architecture is imposing, and the traveller who enters Naples from Rome is struck with astonishment as he passes along this stupendous edifice. In the centre of the façade is a portico, with three arcades, to which access is obtained by means of a double flight of steps. Of these three arcades, the one to the right leads to the male department, while that on the left opens into the female department,—the sexes being effectually separated from each other. The central arcade leads to the church. When our readers are apprised of the fact, that the four sides of the edifice will each measure upwards of 1500 feet in length, and when they recollect that the open space in the centre is to be intersected by similar buildings, all four stories high, they will be able to form some idea of the immensity of the projected pile. Dr Valentin remarks, that a general opinion prevails that, if the edifice is ever completed, it will, on account of its magnitude, and he might we think have added, of the defective plan on which it has been erected, be subject to all the inconveniences resulting from deficient circulation of air, and an excess of dampness. Indeed, the Albergo, owing to its situation, at a short distance from the foot of the hill of Capo di Monti, by which it is completely overlooked, experiences, even in its present unfinished state, a greater degree of the latter defect than was originally contemplated; a circumstance to which some have attributed the prevalence of ophthalmia in this institution.

As the inscription placed over the portico, *Regium totius*

Regni pauperum Hospitium, plainly indicates the institution we are now describing was intended by its royal founder as a receptacle for the poor of the kingdom generally—the aged people, the crippled, orphans, and pauper children. In conformity with the regulations of the establishment, no individual is admitted before he has attained the seventh year of his age. The boys are, in general, brought up for military service, and consequently trained to arms. They are taught reading, writing, and the first rudiments of arithmetic. But their time is not exclusively engrossed by these occupations; on the contrary, they are instructed in various useful mechanical arts and trades; and such among them as distinguish themselves in these avocations are exempted from military service. Nevertheless even these continue, during their residence in the establishment, to perform the military exercise with the rest of their comrades. Some are taught music and drawing, and a certain number are sent to the lectures and hospitals, for the purpose of studying surgery; others are sent out to work at different trades in the city. They are not allowed, however, to walk in the streets unaaccompanied by a prefect. A number of the boys are sent to this establishment from the Annunziata; while others, as Mr Carter informs us, are sent by the police, as a sort of penitentiary for the punishment of minor offences. As regards this circumstance, we can neither confirm nor disprove it, not having heard a word on the subject when at Naples. The girls remain in the house until they find a situation approved of by the administrators. In case they get married, they receive a dower of thirty ducats. Like the women admitted into the establishment, they are employed at sewing, spinning, weaving, and also at mantua-making, &c. A large number of females (nearly three hundred), with an equal number of boys, are occupied in a coral manufactory.

In 1828 the population of the Albergo amounted to about two thousand eight hundred individuals of both sexes; the number of the males exceeding by far that of the females. It is estimated that the building, when completed, will be sufficiently spacious to accommodate ten thousand people. The deaf and dumb who, as we have already stated, were originally placed in the *Ospizio di SS. Guiseppe i Lucina*, have been recently trans-

ferred to the *Albergo dei Poveri*, where they form a separate class, and receive proper instruction. In 1828 their number did not exceed twenty-five.

The establishment, throughout, is remarkable for the degree of neatness and cleanliness with which it is kept. The whole of the interior is painted of a brick colour. The children and other inmates sleep each in a separate and comfortable bed, (the colour of which is the same as that of the walls,) in dormitories sufficiently large to accommodate sixty or eighty. These dormitories, in the present state of the building, are well aired by means of large windows, and communicate freely with each other. The inmates commence their daily labours, consisting as we have seen in all kinds of trades and some manufactures, at five o'clock in the morning. At eleven they take breakfast, and at five they dine. They are well fed—each individual being allowed sixteen ounces of bread daily, soup at each meal, and a quarter of a bottle of wine. To this four ounces of meat are added on Thursdays and Sundays; on the latter day, also, a maccaroni is substituted for the soup.

Corporeal punishment is seldom, if ever, inflicted. The amusements of the inmates are not neglected. Among other means provided for this purpose there is, in one of the large halls on the first floor, a stage with all its appurtenances, on which the people occasionally perform comedies, operas, and even execute ballets. These sources of recreation appear at Naples to be rational and requisite; and we have no doubt that any one who, unbiassed by prejudice, reflects on the nature of Neapolitan character, will concur in this view of the subject. Like the people of the south of Europe generally, the Neapolitans are instinctively fond of theatrical performances, and would probably fall into a state of despondency and melancholy were they entirely deprived of them. They all require the active stimulus of public exhibitions—and life, without these, would seem to them monotonous, and not worth preserving.

It is right to mention in this place, that one-third of the profits of the industry of the inmates goes to themselves, and the remainder to the support of the institution—the revenues of which amount, as Mr Carter informs us, to two hundred

and fifty thousand dollars, of which the government contributes forty thousand dollars.

The next establishment we are to notice, is the Asylum for Invalid Soldiers. The building appropriated to it was originally a convent, built for and occupied by the order of Carthusians. It is situated in one of the most elevated spots about Naples, immediately under the castle of St Elmo, and commands probably one of the most extensive and splendid prospects in the world.

The establishment contains upwards of six hundred invalids, nearly one third of whom have become blind in consequence of ophthalmia. They are all well fed and clothed, and tolerably lodged. The courts are spacious, and one of them is remarkable for the neatness and even elegance of the arcades by which it is surrounded, and into which the lodging rooms of the monks formerly opened.

We are next, in order to complete our remarks on the hospitals of Naples, to offer a sketch of the Insane Asylum. This institution, of which so many contradictory accounts have been circulated, is the only public one in the whole kingdom appropriated to the accommodation of lunatic patients. It was established in the year 1815, the insane, anteriorly to that period, (and in conformity to the custom prevailing in former times throughout Europe of treating these kinds of disease in the general hospitals for the sick) were secured in a separate part of the Hospital of the Incurables. Here, however, these unfortunate individuals were imperfectly attended to, and wretchedly accommodated; from which we may conclude that the idea of separating them from the other classes of the sick and removing them to a distinct establishment may be regarded as a very happy one. At its origin the asylum was placed under the direction of the Chevalier Abbe Giovanni Maria Linguiti, whose claims to that important situation have not as yet been very satisfactorily made out. Be this, however, as it may, Linguiti gradually usurped all the functions of the medical attendants of the house, pluming himself, and finally succeeding in persuading the government, as well as the public in general, that he had devised a plan for the treatment of the various forms of mental alienation, far superior to any heretofore

practised. Such indeed was the high renown which the establishment and its priestly director attained, that several of the sovereigns of Italy, the Duke of Modena, the Duchesses of Parma, of Lucca, &c. defrayed the expenses of young physicians sent by them to Naples, to observe closely a method so highly extolled, with the view of introducing it, if possible, into their own country. At present the reputation of this establishment has, for reasons we shall presently specify, considerably diminished; and we very much doubt whether any one would now think of going to Naples with the hope of learning the most proper method of managing and curing insanity.

The asylum which forms the subject of the present sketch, is situated at the distance of about seven miles from Naples, and in the immediate vicinity of *Aversa*—the *Nuova Atella* of the Normans, by whom it was founded. By those who are well acquainted with the topography of the country, the selection of Aversa for the location of an asylum of this kind will be regarded as judicious; since the town, which boasts of a population of fifteen thousand inhabitants, lies in the midst of a most enchanting country, and combines all those physical advantages which can be derived from geographical position. The establishment at Aversa is divided into three distinct parts. The first is situated within a very short distance of the town, in an old convent, formerly belonging to the order of the Reformed Franciscans. It is called *La Maddalena*, and was baptized, at the suggestion of Linguiti, *Collegio Massimo*, from which we may presume he was a Jesuit. In this house are received individuals of the male sex affected with the different forms of lunacy, uncomplicated, however, with other nervous complaints. A second house, situated at the distance of a mile from the former, is opened for the accommodation of those who, in addition to mental derangement, are affected with epilepsy; and lastly, in a third house, also formerly a convent called *Montevergine*, and situated about two miles from the first, are placed all the female patients. The Maddalena being the only one of these establishments to which visitors are admitted, and of which an account has been published, the remarks that are to follow will not apply, unless otherwise specified, to the others.

The house is two stories high, besides an attic, and completely encloses an open space, which is divided into two courts by a transverse building. The first court is surrounded by arcades, and is ornamented with paintings, &c. It contains two wells, the openings of which are secured by means of iron railings or lattice work. In the second court is found a circular basin, containing, as M. Valentin has well remarked, a small quantity of stagnant water. This basin is surrounded by stone benches, and shaded by myrtles and willows. In the same court is found a column resting on some artificial ruins, and supporting the bust of Tasso. On one side of the house are placed two gardens, the one for the cultivation of vegetables, the other for that of flowers. The latter is made use of also as a pleasure ground for the inmates. In the lower story of the house are found the eating rooms, the kitchens, the theatre, the printing office, the stores, &c.; while in the upper story and attics are placed the hall, or concert room, the billiard-room, the library, and the dormitories. We may state, by the way, that strangers who visit this establishment are struck with the number of busts it contains, and the profusion of inscriptions scattered throughout every corner of it. Among the former are found those of Socrates, Esculapius, Minerva, Erasmus, Apollo, Mirth, Euterpia, &c. Of the latter, it will only be necessary to mention a few; thus, we find on the arch of the front steps, the following words: *Stultorum infinitus est numerus*. Over the door of the dark room used as a means of repression, is written, *Preservativo ad ogni stimolo sull' Eccitabilità cerebrale*. Over the door of the theatre, *Grand sala degli spettacoli*. Over a few musical instruments is written, *Remedi per le malattie dell' anima*. Over the door of the billiard-room will be found, *Sala del bigliardo, e stanza delle distrazioni*. In another place the word *Convalescenza* is inscribed in large letters, and under it the following extract from Ovid: *Quæ nunc ratio est impetus ante fuit*. Over the door of the library we find the following from Horace's Epistles: *Sunt certa piacula, quæ ter pure lecto poterunt recreare libello*, and in another part of the house is the following: *Combien de curieux empressés à me voir pourront en me voyant se passer de miroir*. These are only a few of the inscriptions to be found in this establishment; but they will be

sufficient to give an idea of the efforts made by the director to throw dust in the eyes of the public.

To return to our subject. There is every convenience for bathing ; for cold and warm baths ; for the surprise baths ; for douches of all sorts, &c. The dormitories are small, and appeared to us to be too crowded with beds. In some of the rooms the bedsteads are of iron, and the bedding and covers tolerably good and neat. In other rooms, on the contrary, the beds are placed, some on the floor, others on boards elevated a few inches above the floor, and supported at one end on a movable foot, at the other in a hole cut in the wall. Here the bedding and covers are in a most wretched state. The first of the rooms are occupied by the pay patients, the others by the paupers. The maniacs of the former class, when unmanageable by common means, are shut up in a room capable of containing about eight beds, and secured by means of two straps, on a mattress placed in a bedstead made like a box. This mattress has, in the centre, a hole so arranged as to allow passage to the excrements of the individual. In other instances the same class of patients are placed and secured on mattresses on the floor. When the paroxysm has subsided, or, in cases in which the disease assumes a continued form, when it is mitigated, the patients are removed to the other wards. As regards the room for pauper maniacs, we shall have occasion to say a few words presently.

Exteriorly the house presents a very strange and grotesque appearance, and is much more ornamented than the generality of public establishments of the sort we have seen any where. In order to convey an idea of this, it will be sufficient to state that the large windows which look upon the roads are, like every other, and, as they should be, grated ; but instead of the common iron bars so generally in use for that purpose, each is furnished with a grating so fashioned as to represent a flower pot with the flowers either gilt or painted. We have heard some of the *employés* of the house remark, that these ornamented gratings were intended to remove from the inmates the idea of restraint and coercion so naturally conveyed by the sight of bars, and to offer to their view something agreeable. The reply to this, however, is, that these flower pots and gilded flowers are seen only from the outside, whereas

the patients, for whose benefit they are said to be intended, are, or at least ought to be, in the interior of the house and courts, where all the beauty of the view is for the most part unappreciable.

It is universally admitted by those who have visited this establishment, that it is far from being kept with great care, and particularly with due attention to cleanliness; and yet the keepers and domestics have plenty of time for showing off to advantage before strangers and visitors; for these latter are only admitted on particular days, and cannot, in consequence, take the former while off their guard. Nor have we found that the patients themselves, even those who are tranquil and orderly, and whose means would allow of it, are kept as nice and clean in their dress and person as could be desired.

Insane pauper patients are sent to this establishment from all parts of the kingdom, and maintained there at the public expense. But it is not exclusively appropriated to this class of individuals; for such among the upper classes as are affected with insanity are admitted, on paying a monthly stipend for board and lodging. In this respect, therefore, the institution may be compared to the *maisons de santé* of France and some parts of Italy, and to the private mad-houses of England. The pay patients are divided into two principal classes, according to the price of board allowed for them; each class eating separately and being differently fed. The individuals of one of those classes, for example, pay six ducats a month, and for this sum are furnished at dinner with three dishes, including macaroni. Those of the other class pay twelve ducats, and have four dishes. The paupers have only two. They are all provided with a sufficiency of wine. They all make three meals. The breakfast consists uniformly of only four ounces of bread; the only difference being, that the pay patients have white and the paupers brown bread. The supper of the former consists of bread, (nine ounces), one dish, salad and wine. That of the paupers, of bread (eight and a half ounces), wine, and generally of soup made of semolina. The preceding is the regimen of melancholics and idiots, agreeably to the fortieth article of the regulations. Individuals of each class of the disease are fed somewhat differently. Maniacs, for exam-

ple, are not allowed meat, but only vegetable soup; they have also a smaller quantity of bread. The epileptics, on the days of the paroxysm, have the diet of maniacs; when calm, they are fed like the melancholics and idiots. Convalescents have the same diet as the latter. The sick are fed in the manner the physicians prescribe. Wine is not allowed to maniacs and epileptics.

A few patients pay more than twelve ducats a month,—as much indeed as sixty ducats, and are treated accordingly. But these are very few in number. We witnessed, on one occasion, the dinner of the inmates, and were much pleased with the manner in which it was conducted. The preparations for the repast were announced by a band of military music, consisting partly of regular musicians, hired for that purpose, and partly of the patients of the house, which marched in various directions through the corridors, the arcades, the courts, &c. Previous to this all the inmates, who were able, had attended high mass in a chapel attached to the institution. During the ceremony there was a grand display of music, performed principally by the insane of the house. At dinner the greatest decorum was observed; the patients were remarkably silent, and, in general, ate with considerable appetite. The tables for the different classes of patients were neatly laid, and the materials placed upon them were well prepared. One or two of the administrators always attend on those occasions, in order to superintend the service and insure proper order. In summer all the patients are sent to bed after dinner, for two hours, in order to take their *siesta*. It is necessary to remark, in this place, that all we have thus detailed occurred on a Sunday, when there were many visitors in the house. Whether the same decorum, order and neatness are observed during dinner *every* day, is a point we cannot pretend to decide. The inmates who pay either full or half board, (twelve or six ducats), are not dressed in an uniform manner, but according to their respective ranks in society. The others, on the contrary, receive from the establishment two suits of clothes, one for cold, the other for warm weather, consisting, in common, of uniforms of blue and white, resembling somewhat that of the military. The clothes are, however, kept in the general

wardrobe of the hospital, and are only made use of on grand festivals, or when the establishment is honoured with the visit of some distinguished personage.

The chevalier Linguiti died some years ago, and when we visited the establishment we learnt that it was placed, *pro tempore*, under the charge of an administrative commission. It was said at the time, that the intention of the government was to appoint soon a medical director. Tommasini remarks, indeed, that when he was there, the direction was entrusted to the first assistant physician, Dr Cattaneo, to whom he pays a flattering compliment for the zeal and activity he displayed in the performance of his duties, as well as for his talents and the mildness of his disposition—both of which are so requisite in the individual on whom devolves the responsible charge of treating and governing the insane. We suspect, however, that Dr Cattaneo acted merely as the superintendent of the Maddalena, under the control of the administrative commission, since in the *compte rendu* of the house, published about the time Tommasini was there, he is mentioned simply as assistant physician, and not as director.

The method of treatment adopted at the hospital we are now noticing, consists more of moral than of physical means ; in other words, active remedial agents are seldom employed for the removal of mental disorders—more seldom at least than in other hospitals of the kind we have visited ; and the disease is left pretty much to itself, or combated by means calculated to act on the *moral* of the patient. When, however, during the course of the malady for which the patients have been admitted, there supervene symptoms indicative of active disease of the brain or other organs, bleeding and antiphlogistics generally are resorted to. But as these means would in all probability have been employed for the removal of the same symptoms, were the patient unaffected with insanity, we are fully justified in saying, that at Aversa the mental derangement of the inmates is only combated by means which are supposed to act solely on the moral and intellectual being. Linguiti had suppressed the use of corporeal chastisement and chains, formerly too commonly resorted to in the lunatic asylums of Italy. For the repression of violent maniacs

he made use of a straight jacket, resembling, in many respects, the one employed in France. He adopted also other means for the same object—such as the horizontal position in bed, already noticed. Another means of repression proposed by him, consisted in placing and securing the patient vertically against a wall. This was to be effected in the following manner: the patient's arms being secured by a straight jacket, and the flexion of the fingers prevented by hard leather gloves, he was fastened to the wall by means of a semicircular piece of iron, covered with soft leather, and passing over the chest; the legs being at the same time secured in a board provided with holes for that purpose. The patient was made to remain several hours in this position. Dr Valentin informs us, however, that those two means of repression were only intended for show, and that Dr Ramolini, who remained seven months in the hospital, whither he had been sent by the Parmesian government, assured him, that no foreign physicians had ever seen them resorted to. The douches and baths by surprise are often employed in cases of mania, and, it is said, with effect. The rotatory machine, on the contrary, is not held in much estimation. As may have been already inferred from the inscription placed over the musical instruments in the concert-room, great reliance is placed on music, as a remedial agent, in the management of the inmates of Aversa. In consequence of this, there is a teacher of that art attached to the establishment, under whom those who manifest a taste for it and a disposition to learn are placed for instruction. In one of the halls concerts are given by a full band, the members of which consist principally of lunatics. We were gratified to hear an inmate of the establishment, on one occasion, sing with much precision and taste to the accompaniment of the piano-forte, which was entrusted to another patient—an ecclesiastic, who acquitted himself with much dexterity and talent. There is another source of amusement, not commonly allowed in lunatic asylums, with which the inmates of Aversa are provided: we allude to theatrical representations, in which some of the patients are made to assume the part of performers, others of spectators. For this purpose a stage is provided, as already mentioned, in one

of the lower rooms. But we doubt whether these representations are often resorted to, for when we were there, the stage and all its appurtenances appeared much out of repair. On some occasions a few of the lunatics are sent to the theatres of Naples: this, however, is always at their own expense. Some of the patients are made, for the purposes of exercise and occupation, to work in the garden, to cut and saw wood, draw water, &c.; while, during the hours of recreation, they play at billiards and other games, and occupy their minds in various ways.

Dr Otto, of Denmark, who has written an instructive account of his medical travels on the continent, has expressed an opinion relative to the means employed at the asylum of Aversa for the moral treatment of the insane, which, as it accord perfectly with that of other medical travellers, as well as with the one we ourselves formed on the same subject, we shall present in his own words. "The object constantly kept in view is the complete occupation of the inmates; but the means made use of to effect this do not appear to be wisely chosen. That they should be employed in cutting wood and drawing water; that they should exercise their bodily strength in large open courts; that there should be a printing office, where some set the types while others print; that they should be exercised in translating French into Italian; that some should play at billiards, others be exercised in singing and music, is all useful and to the purpose. But to these are added so many absurd, childish, and even hurtful attempts at occupation, that there is much need of a reform. Thus, for example, in all the wards the walls are bedaubed and disfigured with motley paintings of every description, good and bad. In a large ward, where the lessons in music are given, the walls are painted from top to bottom with caricatures. The amusement of shooting in the court, at the wooden figure of a man, is one which, it is hardly necessary to say, may be attended with the most dangerous consequences*."

But the plan of treatment devised, and to a certain extent pursued by the Chevalier Linguiti, notwithstanding the pains that were taken to extend its fame, and amuse the public with

* Johnston on Charities in France, note p. 440.

the belief of its ingenuity and usefulness, has been accused, by very competent judges, of being calculated to deceive the public, rather than to contribute to the object for which it was intended ; and there are not wanting some, who have gone so far as to pronounce it a compound of tricks and deceptions, unworthy of the age in which we live, and of the country in which it was practised. We deem it unnecessary to dwell minutely on this subject ; but we cannot omit noticing the remarks of a writer, who appears to have contributed more effectually than any other with whom we are acquainted, to open the eyes of the medical public on the subject of these deceptions. We allude to Dr Gualandi, Professor of Pathology and Legal Medicine in the University of Bologna, and Medical Director of the Asylum for the Insane (*Spedale di S. Orsola*) in the same city. Dr Gualandi having been employed to accompany a patient of rank and fortune, who was sent, in 1822, to Aversa, was enabled, during the time he remained there, to inquire minutely into all the details of the administration of, and of the method of treatment employed in, that establishment. The result of his observations were published by him in the year 1823, under the title of *Osservazioni sopra il celebre Stabilimento d'Aversa nel Regno di Napoli, &c.* (1 vol. 8vo, pp. 230.) From a copy of this work, now lying before us, we shall translate a few of the charges brought against the establishment in question. Dr G. remarks, that many of the rooms were, at the time he visited the asylum, very obscure and imperfectly ventilated—that many of the straw beds were filthy and rotten, and emitted, in consequence, an extremely nauseous odour ;—that in other rooms the floors and walls were covered with dirt ; the straw beds black ; the mattresses of bad quality, and often unprovided with sheets ;—that the patients were not kept clean, and in some instances were disgustingly dirty ;—that proper provisions were not made in the rooms for receiving, at night, the excrements of the patients—the poor having only a wooden vessel placed in the middle of the room, and carried out in the morning—an arrangement from which resulted a considerable stench ;—and that only a few of the rooms for pay patients were provided with close-stools. Dr G. further al-

leges, as objections against the establishment, that the patients were not divided into classes,—the director not wishing to establish any distinction between them, and even affirming, that the association together of individuals afflicted with the different forms of insanity contributed, in some measure, to the moral treatment of the disease ;—that the only distinction observed consisted in this, that the pay patients occupied the least objectionable rooms, the furniture of which being procured at their own expense, was of better quality and cleaner in appearance than that of the other rooms ;—that even individuals of the upper classes could not, except under very rare circumstances, obtain a private apartment ;—that stubbornness and disobedience to the orders of the officers of the house and the attendants, were punished by imprisonment, which was prolonged, in some cases, for several days ;—that the greater number of the patients were left almost entirely to themselves, some walking about from morning to night in the courts and passages, while others passed their time in perfect idleness ;—that the more calm among the patients were allowed only on Sundays to remain in the garden during two hours after dinner, to enjoy the pleasure of dancing the Tarantella ;—that at night no lights were allowed in the dormitories or passages, so that complete darkness prevailed often, to the great confusion of such of the inmates who were under the necessity of rising after dark ;—that in winter no stoves at which the patients could warm themselves were allowed in any part of the house, and that the only substitutes for them consisted in three coal-pans, or braziers, placed in the halls, on the ground floor, near the refectories. These Dr G. regards as quite insufficient ; but adds, that, fortunately, the mildness of the climate obviates in some measure the inconveniences that might result from this circumstance. The same author, after speaking favourably of the introduction of music in the treatment of insanity at Aversa, remarks that the billiard board, on the importance of which much has been said, was never occupied by more than two or three chronic patients, and that too only when strangers visited the establishment ; and that an equal number only were occupied in the printing shop, in aiding a regular workman, paid for the purpose of attending to the business,

Dr Gualandi further remarks, that the Abbé Linguiti was in the habit of telling all the visitors, and of publishing in the newspapers, that the moral treatment in the establishment entrusted to his direction consisted principally of the following means: 1, occupation; 2, distraction; 3, repression; and 4, of the peculiar treatment necessary for each case. To this, however, he replies, that from what he has said, it will be immediately perceived that this excellent plan was not put into operation. He even maintains that, properly speaking, there was no regular plan of treatment pursued; and inveighs bitterly against the two methods of repression we have noticed in a preceding page, pronouncing them to be severe and barbarous. In addition to this, Dr G. remarks that the douches and baths were administered in a very imperfect manner;—that the servants were too few in number and not judiciously selected;—that the physicians had not sufficient authority, that being almost exclusively vested in, or assumed by the director;—that no regular register was kept of the phenomena, progress, and results of the cases. He blames the director for allowing the indiscriminate association of the tranquil and turbulent patients. “How can we help expressing disapprobation,” he observes, “at the fact, that in the most horrid place in the third story, in which the furious are imprisoned, they lie often on the floor during the night, and are exposed, in the day, naked, bound by straps, to the inclemencies of the weather, seated under a single roof, with a straw bed near them, no larger than the palm of the hand, and often rotten and full of vermin?” The care of these poor wretches is confided, Dr G. adds, to a stupid lunatic, who, placed in a room situated in front of the principal staircase, cannot, if he would, go up and be ready to administer to the wants of all the wretched beings collected in that ward. Hence their horrible sufferings, resulting from hunger or thirst, as manifested by their sinking from exhaustion, or by the most pitiful cries. In proof of this Dr Gualandi alludes to the case of a man named Dominico Romano, who, pressed by hunger, or at least in a moment of phrenzy, gouged out the eyes of one of his comrades, and ate off the ends of all his fingers. Dr Valentin states that Dr

Ramolini related the same anecdote to him, which indeed will be found described at full length in the acts of the special tribunal of the *erradicamento* of Aversa.

Dr G. remarks, at the commencement of his third chapter, that it is impossible for a stranger to form a correct idea of this establishment, because, no sooner does he enter than a servant occupies his attention, by a description of the stores and inscriptions, by conducting him to the printing office, and by giving him a long dissertation on the utility and success of this and the other means employed. After this, he is conducted to the garden, which, he is told, is cultivated by the inmates. Then he is shown the fine staircase, the church, the ballroom, &c. He is gratified with some music, and is finally conducted out, without being allowed to see any of the bed-rooms. It is very plain, he adds, that an individual, who sees no more of the house than this, can form no opinion of the plan of treatment pursued, or of the manner of managing the patients. Even physicians who visit the establishment are not allowed to penetrate much deeper into the secrets of its administration or organization.

Such was the state of the celebrated asylum of Aversa at the time of Dr Gualandi's visit. From all we have been able to learn on the subject, and from what we have seen, we have not the least doubt of the correctness, at the time, of all the charges brought against the institution by that intelligent author, and that many of them could, with the strictest propriety, be adduced against it at a much later period. Yet it is but justice to state, that in 1815, a new set of regulations were framed, by order of the government, for the administration of the house, and that when we visited the latter, in company with the principal physician, Dr Vaupes, who was kind enough to lead us through the whole establishment, we had reason to be pleased with its general appearance; at least, more so than we had anticipated from Dr Valentini's and Dr G.'s remarks on the subject. This induces us to conclude that some ameliorations had been made in the arrangements of the house, and in the management of the patients, since Longuiti's death, and the period of Gualandi's and Valentini's visits. But, while allowing this, we must beg leave to state, that

much, very much, appeared to us to remain to be done, before the establishment could deserve the praise once bestowed upon it, or to be compared with other lunatic asylums in Europe or America. Tommasini, while allowing full credit to Linguiti, (who, whatever may be said respecting the defects of his administration, and his quackery, certainly displayed no ordinary share of ingenuity and even genius,) for some of the means he suggested in the management of the insane, remarks: "but whether he wanted the means,—whether the smallness of the place did not permit him to put into operation so vast a design; certain it is that the most important and difficult part of the undertaking,—the moral treatment and the sound education of the insane remained limited to good intentions." This we believe is exactly true, for we could never be made to attach much importance to many of the means suggested by the late director, and for which he has been highly extolled by his partisans.

During our residence at Naples, we learnt that the insane were soon to be transferred from the establishment of Aversa, to another and larger one situated near the entrance of the city, not far from the Royal Museum. The building selected for this purpose is sufficiently spacious to be divided into several compartments, suitable to the accommodation of *all* the patients,—the sexes being still kept apart from each other. It was formerly, like the Maddelena and Montevergne, a convent, and was undergoing, in 1828, the repairs necessary for placing it in a fit state for receiving its new inmates. Although great advantages will probably result from this change of location, in as much as the service of the house will be better conducted, and the whole establishment placed more immediately under the observation of the medical officers, and of the administrative commission, than it could possibly be at so great a distance from the city: yet, we are inclined to believe, that the open country and wholesome air of Aversa will often be regretted. Dr Vulpes informed us, that in the new establishment he would have the patients divided into different classes, according to the nature of the complaint, and would cause them to be placed separately; he nevertheless was of opinion, that some advantages might be derived, by allowing the gay and

noisy to associate with the melancholic—the cheerfulness and buoyancy of spirits of the former being likely to arouse the latter from their torpid state, and vice versa.

There are several medical men attached to this establishment—two ordinary or resident, and several assistant physicians, and one surgeon; one chief physician and one consulting physician. In 1827 the former were Messrs Cataneo, Federi and Saporito. The ordinary physicians were Messrs Basile and Perrone. The chief physician was Professor Vulpes, and the consulting physician Professor Ronchi, of both of whom we have already had occasion to speak, while on the subject of the medical schools of Naples. The duties of the resident physicians are, according to Dr Gualandi, to visit the establishment once or twice every day; to keep watch, or in place of it to pay some one belonging to the house to perform that service in their stead; to accompany the strangers who visit the institution, and give them the various explanations of those objects that are destined to inspire the idea of the marvellous, and serve to produce illusions; finally, to make reports to the director on the state of the patients, in order that, while at Naples, he may be apprised of all that occurs in the establishment, and speak to every one with perfect knowledge of the state of things there. The chief physician visits the establishment once or twice a week, or oftener if his services are required, and receives a salary of forty-five ducats a month. As regards the duties of the consulting physician, we shall have occasion to speak of them presently.

In 1826 a set of regulations, prepared by order of, and approved by his majesty, was published under the title of *Regolamento per la Direzione Sanitaria Delle Reali Case de' Matti nel Regno di Napoli*. The first chapter of this volume, from which we are now to glean a few facts, has reference to the formalities requisite before any individual can be received into the hospital of Aversa, as well as to those to be observed immediately after his admission. It provides, that before a lunatic is sent to Aversa, he must be shut up in a house of observation at Naples, where the physician and surgeon of the latter establishment, in conjunction with the consulting and first physician of the former, are obliged to examine whether his disease be real or not,—it sometimes being simulated in

order to escape the punishment due for a crime, or to avoid military conscription, while at other times it may be imputed to an individual from motives of interest, &c. In the case of pay patients, these observations are made in the establishment itself, where they are immediately sent,—the authorization of the minister of the interior to that effect having, however, been previously obtained. In order to effect these important observations, holes are bored in the walls of the room in such a manner as to allow the physicians to observe the patient without being seen by him. As soon as the individual is ascertained to be insane, he is admitted into the establishment; the poor patients being sent thither provided with a certificate signed by the four physicians. The name of the individual is immediately entered on a register, together with his surname, country, condition, the date of his admission, and the character of the disease. Independently of this register there are as many others as there are classes of insane patients, in which are entered the name, surname, state, temperament, condition of the patient, as well as the mode of attack, the progress and causes of the disease, the treatment pursued, the antecedent maladies, &c. These notices are forwarded to the intendant of the province, or to the prefect of police, who obliges the physician of the commune whence the patient has been sent, to transmit all the requisite information on those points, agreeably to a form prepared for the purpose. From these registers is derived the knowledge of the number of insane of the different classes in the establishment.

Immediately after the admission of the patients, they are washed in a tepid and aromatic bath, and next dressed in the manner already mentioned. This done, they are conducted into a room of observation. The second regulation relates to the patients after their reception,—*Osservazioni su i folli ricevuti*. According to it they are to remain in the rooms of observation for at least eight days, during which time they are to be examined by the physicians, and particularly by the assistants, who, however, must avoid being perceived by them. The first prefect and other *employés* inform the physicians of all that is done by the patients thus observed. These observations have for their object to ascertain the particular phenomena presented by each patient, and to determine the class to which he belongs; to

ascertain with precision if the paroxysms take place before or after dinner, in order to know if they are produced by want of food or repletion ; if they occur in the morning or at noon, in the evening or at night ; if when the patient is alone or in company, &c.

All the information on these points being obtained, the assistant physician, charged with the keeping of the journal of the house, enters the name of the individual in the list of one of the four classes of patients : 1st, Maniacs ; 2d, Melancholics ; 3d, Idiots ; 4th, Epileptics with delirium. The principal physician examines this classification in virtue of the power of inspection vested in him, and is, if possible, to visit the insane in such a manner that one of his visits, two of which occur during each week, shall take place at one hour, and the other at a different one ;—sometimes on the same, and at others on different days. He is even sometimes obliged to sleep in the institution, in order to pay a nightly visit.

The classification being made, the ordinary and assistant physicians hand over the patients to the proper prefect, in order that they may be conducted to and lodged in the rooms appropriated to the class of the disease to which they belong, so far at least as the present state of the house will permit.

It may be proper to state here, that in order to be received at Aversa, it is first necessary to hand in a petition to the director, if the individual is able to pay for his board. When, on the contrary, it is desired that he should be admitted as a poor patient, a privilege granted only to Neapolitans, it is necessary to apply to the minister of the interior, who judges of the validity of the claims of the individual to the charity, and who, in case he thinks them sufficient, issues an order for admission. The first class of patients pay at least one month's board in advance, and must furnish a security for the payment of the succeeding months*.

The code of regulations to which we have alluded, specifies the duties of the physicians. From the third chapter we learn, that the consulting physician having only the superintendence of the sanitary service, the ordinary and assistant physicians are to propose the method of cure suitable for each patient ; that from this the consulting physician, influenced by the observa-

* Gualandì, op. cit. p. 36.

tions of the first physician, establishes the plan of cure; that the assistant physicians must keep a register, in which is to be entered all that relates to each case; that the first physician, at his visits, is to examine these registers of daily observations, and prescribe all that he deems necessary for the cure; that the ordinary and assistant physicians are to make their questions and propose their doubts to the former, to be transmitted with his observations to the consulting physician; that the latter communicates, through the medium of the first, to the ordinary and assistant physicians, all the modifications he deems necessary to make in the plan of cure; finally, that in his visits the first physician is followed by the ordinary and assistant physicians, by the different prefects, as well as by the ordinary and assistant surgeons. The same regulations refer also to the method of cure,—leaving much, however, to the discretion of the physicians. They abolish, definitively; the use of chains; direct the maniacs to be placed in a dark room; authorize the use of electricity and galvanism in cases of melancholy,—recommending, at the same time, the greatest caution in the use of these means; prescribe the regimen for each class of patients; the articles of dress; the hours of meals and of sleep; the modes of exercise and movements,—walking, dancing, music, reading, writing, recitation, painting, sculpture, &c.; the whole being left to the direction of the consulting physician; state that the amusements of riding and of the theatre are at the charge of the patient; recommend conversation with family and friends; direct mass to be heard at stated times, and that the patients should be made to attend to the other acts of religion whenever they are in a fit state to do so; direct that the convalescents should be placed in a convenient room for observation; that the sick be sent to an infirmary where the phenomena presented shall be carefully noted; and finally, order that in case of death, an examination of the body shall be made.

When we visited Naples the ward of observation was situated in the hospital of S. Francesco. No selection could, we believe, have been more injudicious than that of this establishment for the location of such a ward; since, destined as it is for the reception of sick prisoners, and having the appearance of a jail both externally and internally, it must convey to the

unhappy sufferer who is conducted there, the most gloomy and desolating ideas,—those of forced seclusion. Independently of this circumstance, which it may be said cannot affect the maniac, the noise in such an establishment is distressingly great, and must inevitably tend to keep the patient, if maniacal, in a state of continual excitement. We firmly believe, that had we been forced to reside there a week, we would have been, at the end of that time, a fit subject for Aversa. We were happy, however, to hear at the time from Dr Vulpes, in company with whom we visited the place, that the ward of observation would in all probability be transferred to some more appropriate house.

Dr Lostritto, who served in 1825 as one of the ordinary physicians at Aversa, has compiled from the registers kept in that establishment, statistical observations, which he forwarded to Dr Esquirol of Paris, with a request to have them published. This Dr E. has done in a note inserted in the twelfth volume of the "*Archives Générales de Médecine*," from which we borrow the following facts. Dr E. remarks that in fourteen tabular views forwarded to him, Dr Lostritto presents the number of patients admitted, every year and every month, during a period of ten years,—from the 1st of January 1814, to the 31st of December 1823; as well as a statement of the age, sex, and temperament of the persons admitted,—of the physical and moral causes of the disease in each case,—the cures, relapses and deaths, &c. It appears from his statements, that the number of admissions in the period already mentioned amounted to 1725. The average number for each year was, therefore, 172.5. In the years 1822 and 1823 it was greater than it had been during the preceding years. In 1814 it did not exceed 151, while in 1823 it was no less than 212. Dr Esquirol adds, that this increase, which is still greater in 1825 and 1826, was doubtless due to the political troubles which agitated the kingdom of Naples at that period. The number of admissions is greater during the months of May, June, July and August; much smaller in those of winter. The same occurs at Paris and London. The establishment of Aversa, receiving patients from all parts of the kingdom, and the number of admissions into it, compared with the population, being smaller than is found to occur in France and England, it would follow that the various forms of insanity are less

frequent there than they are in the latter. Such indeed is found to be the case, not in respect to Naples only, but also to the rest of Italy, to Spain, and to the north of Europe. At Naples, insanity attacks most frequently individuals between the twentieth and thirtieth years of age,—the number increasing as we approach the latter period, at which the disease appears much more frequently in both sexes. It diminishes very abruptly after the fortieth year, while in France it appears more frequently among women between fifty and sixty than among men. At Naples the disease is much more common among males than females. The same occurs in the rest of Italy and in Spain. At Aversa, during the period already specified, out of the 1725 cases admitted, 1221 were males and 504 females; which gives a proportion of five of the former to two of the latter. From a document in our possession we find that the number of the sexes, during each of the ten years, was as follows :

Year.	Males.	Females.	Year.	Males.	Females.
1814	101	50	1819	133	41
1815	95	45	1820	116	52
1816	133	49	1821	132	45
1817	88	56	1822	148	46
1818	118	65	1823	157	55

Dr Esquirol remarks, that in the southern parts of France, the number of male patients is nearly equal to that of females; while in the northern portions of the same country, the number of females is greater than that of males. It is not to be imagined, however, that this difference is to be attributed to the difference of temperature, since it is found, that in Russia, the number of male exceeds that of female patients by one-fifth.

At Naples the bilious temperament predisposes, more than any other, to insanity. Out of 1299 patients whose mode of life could be ascertained, 317, or one in four, lived in the country. Exposure to the sun, Dr E. remarks, may perhaps have contributed to this effect; yet, in the enumeration of the physical causes of the diseases, insolation is only mentioned four times. As in France and England, moral causes are, at Naples, oftener productive of insanity than those of a physical nature. Dr Los-
 tritto only mentions twenty cases of hereditary insanity, eighteen among males, and two among females. This number of heredi-

tary cases is so much smaller than what is observed in France, England and Germany, that Dr Esquirol suspects some error has crept into the observation of the cases generally. At Naples it is found that insanity is frequently the effect of malignant, cerebral, and particularly of malignant intermittent fevers. Love is marked among the moral causes of the disease in about one-twelfth of the cases. Vanity, pride and ambition have also often contributed to its production. Of all the forms of the complaint monomania is found to be the most common. Out of 1430 cases, 843 were monomaniacs. Of these 425 were monomaniacs with exaltation and the predominance of an expansive passion. In 418, the disease assumed the form of *lypemia*, in which the patient is afflicted with a depressing passion. Cases of *mania* are more frequently met with in May and June; less so in July and August. Monomanias appear in June,—continue to do so in July and August, but are mostly prevalent in September and October. Of all the forms of insanity, mania is found to be the most easily cured. The cures are in the proportion of three to ten among men, and five to seventeen among females. This proportion is smaller than in France and England; in the former of which it is calculated, that under the most unfavourable circumstances, the proportion is of two to five, and under the most favourable, one to two. The cures are numerous in September, and continue so in October and November. They are most numerous in April. The same results are obtained in France. The number of cures was much greater in 1819 and 1820 than it had been during the preceding years, or has been since. Dr Esquirol remarks, that the same circumstances were noticed in France in 1814, 1815, 1816, and attributes it, in both countries, to the number of cases of accidental insanity, occasioned by the political events which occurred there in those years. Out of 578 cures, obtained during ten years, there occurred ninety-two relapses, seventy-three males and nineteen females, or about one in six. In France relapses are not so frequent, occurring in the proportion of only one case out of five among men, and in only one in ten among females. This gives an average of one in seven and a half. As at Paris, the number of relapses has been found at Aversa to be greater among males than among females.

The mortality is found, in the same establishment, nearly equal among males and females; being in the proportion of about one-fourth for both sexes. In France the proportion of deaths is much smaller, being only one-ninth among the males and one-sixteenth among the females—or one-thirteenth for both sexes. As in France, the mortality at Aversa is found to be much greater during winter than in any other season. Thus, in November, December and January, 207 individuals have died, while during the remaining nine months only 529 deaths occurred. The mortality is smallest in May, June and July. The number of deaths was much greater in 1816, amounting to 116; whereas the average number for the ten years did not amount to more than 53. The cause of this difference is attributed to an epidemic of typhus fever, which did not spare the insane population of the house. Insanity alone does not kill. Few maniacs die, and apoplexy rarely occasions death in this disease. Several melancholics have died in consequence of refusing nourishment, some with the view of committing suicide; others again from the belief that they could not swallow. *Hydrophobia*! dry gangrene, exanthematic fevers are frequent causes of death at Aversa.

In his reports, Dr Lostritto does not present the results of the post mortem examinations, made at Aversa, during the ten years to which we have alluded. Dr Esquirol, after remarking that in the various insane asylums of France, more than one half of the insane patients who die are affected with paralysis; adds, “the physician in chief of the establishment of Aversa (Dr Vulpes) assures me, that very few paralytic cases are seen there, among males or females; although the population of the house amounts at present to 600 individuals. It would be interesting to know the cause of so striking a difference in the lesions of the power of movement among the insane patients of the two countries.” We find, however, in a note communicated by Dr Lostritto to the editor of the *Osservatore Medico* of Naples, and inserted in the number of that journal for 1st of January 1827, that the author rectifies, in some measure, the information obtained by Esquirol from Dr Vulpes, affirming that although at Aversa complete paralysis is of rare occurrence, the variety of the disease which Esquirol notices, and which Bayle describes as *general*, and at the

same time *incomplete*, affecting first the tongue, and extending gradually to the muscular system generally, rendering locomotion uncertain and vacillating, and finally putting a stop to every species of movement, is often met with—the loss of sensibility being less intense than that of the power of motion.

From a series of statements published in 1827, in a work entitled *Giornale del Reale Stabilimento de' Folli in Aversa per l'anno 1826*, we learn that, on the 1st of January 1826, there existed in the three establishments for the insane, at or near Aversa, 644 patients, of whom 408 were males, and 246 females. The proportion of each class, in both sexes, was as follows :

<i>Males.</i>			<i>Females.</i>		
1. Mania,	. . .	122	Mania,	. . .	69
2. Melancholy,	. . .	163	Melancholy,	. . .	120
3. Idiocy,		87	Idiocy,		33
4. With Epilepsy,		36	With Epilepsy,	. . .	14
408			236		

TABULAR VIEW OF THE INSANE EXISTING AT AVERSA,
JANUARY 1, 1826.

	Mania.		Melancholy.				Epilepsy with			
	Simple	Furious	True	Spurious	Furious		Mania.	Melancholy.	Idiocy.	Total.
Males	106	16	127	25	11	87	22	4	10	408
Females		69		120		83		14		236

The number of lunatics affected with disease in the course of the year amounted to one hundred and eighty-seven: of these one hundred and two were males, and eighty-five females. They may be arranged in the following order:

		<i>Males.</i>		<i>Females.</i>	
Febrile diseases, ...	46	died 1	31	died 1	
Apoplexy, ...	11	— 11	4	— 4	
Tabes and marasmus, . . .	17	— 14	10	— 3	
Hemoptysis, ...	2	— 1	3	— 2	
Erysipelas, ...	1	— 0	3	— 0	
Dysentery, ...	3	— 1	0	— 0	
Diarrhea, ...	1	— 0	1	— 0	
Dyspepsia, ...	2	— 0	0	— 0	
Violent asthma, ...	1	— 1	1	— 1	
Ascites, ...	1	— 1	0	— 0	
Pulmonia, ...	1	— 1	0	— 0	
Hepatitis, ...	1	— 0	0	— 0	
Ophthalmia, ...	2	— 0	0	— 0	
Chronic convulsions, . . .	2	— 0	0	— 0	
Eruptive diseases, ...	3	— 0	4	— 0	
Enteritis, ...	1	— 1	0	— 0	
Contusion on the head, . .	2	— 0	0	— 0	
Colic, ...	2	— 0	1	— 0	
Wounds, ...	2	— 0	3	— 0	
White swellings, ...	1	— 0	0	— 0	
Moreover, one lunatic who died before reach- ing the establishment, . . .	0	— 1	0	— 0	
Luxations, ...	0	— 0	1	— 0	
Ophthalmia, ...	0	— 0	1	— 0	
Anorexia, ...	0	— 0	1	— 0	
Frost-bitten, ...	0	— 0	21	— 2	
		— —	— —		
		102	33	85	14

Among the males four were cured of their lunacy by the disease with which they were affected (one after fever, two after eruptive disease, and one after contusion on the head) and nine were greatly relieved (seven after fever, one after hemoptysis, and one after chronic convulsions). These nine

individuals were soon afterwards discharged cured. Among the females six were cured and five greatly relieved in the same manner. Of the former, three were cured after fever, two after erysipelas, and one after an eruptive disease. Of the latter all were relieved after an attack of fever. They all were soon after discharged cured. Six of the cases of marasmus, among the males, were occasioned by inanition, from a refusal to take nourishment. This statement of the establishment of Aversa gives results which agree in some points, but disagree in others, with those we have copied above. Thus, among the male patients, the cures were only as one to five and nine-tenths; amongst the females, as one to six and a half. The discharged relieved amounted, among the males, to one in about twenty-six, and among the females to a little more than one in twenty-four. The deaths among the males were as one to rather more than seventeen; and for the females as about one to twenty-one.

It will be seen, also, that of forty-seven deaths fifteen were from apoplexy; whereas M. Esquirol states this disease to be rarely a cause of dissolution among lunatics.

Having stated that of the 263 patients treated in the establishment of Aversa during the year 1826, there were discharged 141 cured and 42 greatly relieved, and that during the same period 47 had died, making an amount of 230; it results that on the 1st of January 1827, there remained in the house 633 patients; 414 males and 219 females. The following table will afford a view of the proportion of the various forms of the disease in each sex.

	Mania.		Melancholy.			Idiocy.	Epilepsy with			Convalescents.	Total.
	Simple	Furious	True	Spurious	Furious		Mania.	Melancholy	Idiocy.		
Males	92	21	116	29	11	94	23	5	13	10	414
Fem.	38	24	7	22	34	75	5	1	4		219

ART. II.—BROWN'S MEDICAL ESSAYS.

Medical Essays on Fever, Inflammation, Rheumatism, Diseases of the Heart, &c. &c. By JOSEPH BROWN, M.D. of the Royal College of Physicians, of the Royal Medical Society of Edinburgh, and one of the Physicians of the Sunderland Infirmary.

Human maladies are so exceedingly complex, and the human mind so variously constituted, that every practitioner of much experience and observation must have noticed new forms or modifications of disease, and must have drawn inferences, and instituted modes of practice, different from those before prevalent, and entitled at least to the attention of his brothers in the profession. A book, therefore, which professes to embody the experience and peculiar views of any respectable physician, should always be received as a favour conferred upon the public. Though its pretensions may not be first rate, nor every thing which it contains deemed worthy of adoption, or even of minute attention, still something may almost always be gathered from it, which the wisest practitioner may turn to his own profit or to that of his patients. Nor need we fear the unnecessary multiplication of such books: if possessed of extraordinary merit, they will deserve the place which they will retain on the shelves of our medical libraries; if furnished with but a small quantity of valuable matter amidst a mass of rubbish, they will undergo a careful scrutiny, and yielding what is really useful to the industry of compilers, will float down the current which has borne so many of their predecessors into oblivion. The book before us is certainly not one of those which will live for ever. It neither contains sufficient important original matter, nor possesses sufficient merit of style or arrangement, to entitle it to so high a distinction: but it is not without claims to favourable notice, and will furnish to the reader much that is interesting and something that is really valuable, both in fact and in opinion. The author appears to have had extensive opportunities of witnessing disease, and being of an observant turn of mind and independent mode of thinking, has not allowed these opportunities to pass without improvement. His attention, how-

ever, seems to have been especially directed to a few complaints; or if more diffusive, has not been followed, except in these instances, by such discoveries or reflections, as have been deemed by him worthy of communication to the public: for his work, though written in accordance with the principle that every experienced practitioner is possessed of knowledge which, as it may be useful, should be made known to others, is confined, with the exception of a few general remarks on inflammation, to the subjects of fever, rheumatism, diseases of the heart, ischuria renalis, and stricture of the sigmoid flexure of the colon. Through each of these topics we propose to follow the author: and as the book itself will probably come into the hands of few of our readers, we shall endeavour to condense the views which it presents, so as to give a just though perhaps incomplete picture of its contents. This we shall be the better enabled to do, as the treatise is not characterised by great compactness of expression or arrangement: and all that is original or important may be compressed into a comparatively small space. We are pleased, however, to be able to state, what cannot be said of many medical works of much greater pretension, that the style is easy, natural, and generally correct: and the reader is allowed to fix his attention upon the meaning, without being perplexed by the intricacies of doubtful or involved construction, or dazzled by misplaced attempts at elocution, or offended by gross violations of the ordinary rules of good writing.

The first in the series of essays which constitute the work, is that upon the exhaustless subject of fever. The doctor at once allows us to perceive towards which side of the controversy, as to the pathology of this form of disease, he inclines, when, in the introductory paragraph, he adverts to what he considers "a common error in some parts of the world—that of supposing some one symptom cardinal, and converting it into a hinge, on which all others are made to turn."

In his observations relative to the causes of fever, we do not find much that is peculiarly new or interesting; but an incidental remark, as to the influence of malaria in producing jaundice, attracted our notice, and may not be unworthy of that of our readers. Dr Brown is disposed to ascribe jaundice, in some instances, to the direct operation of mias-

mata, in a state too much diluted to produce their ordinary effects of intermittent and remittent fever. "The British army," he observes, "marched from Paris into French Flanders in the beginning of 1816. Part of it was stationed in Artois, on the somewhat low and flat banks of the Scheldt. The country being well drained and cultivated, ague was very rare, and remittent fever by no means prevalent; but the slower operation of malaria was visible, during the first two years the army remained there, in the extraordinary number of cases of jaundice which occurred. Many of them proved very intractable. As our troops became accustomed to the climate, this disposition to jaundice disappeared." Believing, as we do, that this complaint, in the great majority of instances, depends on a diminution or suspension of the secreting action of the liver, and not on any disease of the ducts, we have no difficulty in admitting the correctness of Dr Brown's inference as to its cause, on the occasion alluded to.

Agreeing fully with the author, that miasmata, either of vegetable or animal origin, are the frequent cause of idiopathic fever, and that they operate by entering the system through *the medium* of absorption, we cannot coincide with his opinion, that "common causes, such as atmospheric vicissitudes, errors in diet, excessive fatigue, exposure to wet, &c." are inadequate to the production of the disease, except by bringing into action a poison already working in the system, or by disposing the frame to be more readily acted on by the general causes. Experience has abundantly taught us, that fevers occur at seasons and in situations in which miasmata do not prevail; and it is unphilosophical to conclude, that because they generally proceed from this cause, they should under all circumstances be ascribed to it, however obviously they may appear to have a different origin. Nor is such a conclusion necessary to support the pathological view which the author takes of fever: for, supposing it to exist altogether independent of those local irritations or inflammations to which it is becoming fashionable to refer it, we are not authorized by any facts within our knowledge to infer, that the general vice or derangement of which it may consist, is incapable of arising from the influence of changes

of temperature, or other alteration of the circumstances essential to the healthy operations of the system.

In considering the nature of fever, Dr Brown first presents us with a sketch of the opinions of former writers, dwelling more particularly upon those which ascribe the disease to local inflammations. "Dr Beddoes" he informs us, "was the first in Great Britain who brought forward inflammation, if not as the cause of its phenomena, at least as an important concomitant. He did not, however, profess to be perfectly original in his views, but acknowledged his obligations to Germany. Since his time, most writers upon the subject of fever have been honourably distinguished from those who had preceded them, by close reasoning from the phenomena of the disease to functional or organic changes, with which we can beneficially contend; and there has been an increasing disposition to examine the organs after death, and to seek there a confirmation or refutation of the inferences drawn from the symptoms. The most distinguished advocates of the inflammatory hypothesis in Great Britain, have been Dr Clutterbuck, who ascribed the disease to inflammation of the brain, and Dr Mills, who has run parallels with much spirit and ingenuity between various forms of fever and inflammations of many organs. Drs Jackson and Armstrong superadded to the inflammatory doctrine that of congestion, and more recently, in France, Professor Broussais has considered inflammation of the stomach and bowels as the *primum mobile* of all fevers."

Dr Brown, however, professes himself altogether dissatisfied with this hypothesis in any of its forms. One of the arguments which he urges against it is common to all its opponents, and appears to us not destitute of weight. In the following observations, where we do not quote his words, we endeavour to convey his meaning. Were inflammation of any organ the primary link in the chain of diseased action upon which all others depend, the conclusion seems irresistible that the stimulant practice must always prove injurious, and very generally fatal. But not only has experience taught us that patients frequently recover under this practice, but we are informed, on authority that cannot well be questioned, that in some epidemics it has been eminently successful. Were pleurisy, or peritonitis, or even bronchitis, treated upon this plan,

should we find the number of recoveries nearly proportionate to those which occur under the same treatment in fevers? May we not at least deduce from this fact, that no very considerable or acute inflammation of any important internal organ exists in those who recover; that if inflammation does exist, it is of a slight or sub-acute character, and wholly inadequate to the production of so formidable a disease as we often encounter in idiopathic fever? From the exceeding violence of cases, even from their very onset, which frequently recover under what the advocates of the inflammatory hypothesis consistently maintain to be most adverse treatment, is it not probable that these gentlemen overlook some important phenomena, or do not draw the legitimate inference from them?

Opposed as the author is to the general doctrine, he appears to be still more so to that form of it which, "partly from a considerable portion of talent possessed by its author, M. Broussais," and embodied in its support, but chiefly "from the zeal displayed in extolling its merits by a host of active partisans, has obtained the most ascendancy over the public mind." Into this part of his work the doctor has infused a considerable portion of warmth of feeling, called into action by a conviction on his part, of a general want of courtesy in the celebrated French medical reformer, and perhaps heightened by some private grievances which he appears to have sustained. We shall, however, endeavour to extract his arguments without the condiments with which they are served up; as though they may thus be rendered less racy to the taste, we are among those who would prefer the imputation of insipidity to the charge of provoking or ministering to a depraved or unwholesome appetite.

The doctrine of M. Broussais is stated in the following terms: "All those fevers hitherto considered essential or idiopathic, depend upon inflammation of the lining of the alimentary canal, which inflammation uniformly commences in the stomach. Fever is always the result of irritation of the heart, primary or sympathetic; and this irritation is a shade of inflammation, or carditis. Of course, in idiopathic fever, or what has been hitherto deemed such, this carditis is sympathetic of gastro-enteritic inflammation. As every inflammation, wherever seated, sufficiently intense to produce fever

on reaching the heart, is capable of being communicated to the brain, and as it does not change its nature by transmission, inflammation of this organ is an occasional adjunct of idiopathic fever."

To establish the truth of this doctrine it is necessary that the uniform existence of gastritis or gastro-enteritis in fevers should be proved; and this, according to Dr Brown, has not been done. Dissection has not always revealed marks of previous inflammation in the mucous membrane of the stomach. A case of fatal typhoid fever is detailed, in which, though the intestines were upon examination found to have been inflamed and ulcerated, "the mucous membrane of the stomach was perfectly healthy." Against the inference, that because gastric or gastro-enteritic inflammation is revealed by dissection in the great majority of febrile cases, it must therefore exist in all, the argument may be urged, that the cases in which an opportunity for dissection is offered, are the worst, and therefore most likely to be attended with local disorganizations, which all admit to be very frequent accompaniments of fever. But it is said that inflammation may exist during life, and yet leave no traces after death. The reply is obvious, that the positive proof by dissection must be abandoned; and the question of the uniform existence of gastric inflammation in fevers must rest upon the evidence of the symptoms. The experience of practitioners must now be appealed to; and there are comparatively few who will not admit that they have met with cases in which symptoms of gastric or even enteric inflammation were wholly wanting. There is often no pain upon pressure, no nausea nor vomiting, in fact, no uneasy sensation in the abdominal region; and the only certain evidence of disordered stomach is the want of appetite, which may result as well from diminished energy as from over excitement of that organ. If inflammation exist under these circumstances, it must be exceedingly feeble, and altogether inadequate to the production of those violent symptoms which are sometimes met with in such cases of fever. But even allowing the uniform existence of a certain degree of gastric inflammation, we by no means necessarily admit the inference that it is the proximate cause of the disease. On the contrary, considering the relative degree of violence in the gastric affection, and that of other parts of the system, we

might with greater propriety view it as an effect than a cause, and they who maintain that fevers are general affections of the system, readily admit that the stomach shares with all other organs in the diseased action, and may be more or less severely irritated or inflamed, according to its peculiar susceptibility, or the energy of the morbid agent. The circumstance urged in favour of the gastric hypothesis, that the alimentary canal is the centre of extensive sympathies, will operate as well in an opposite direction; for if on this account inflammation of the mucous membrane may produce diseased action in other parts of the system, this very inflammation may be excited by diseased action previously existing elsewhere; and we are then left to decide which symptoms have the priority in point of time—those which are properly gastric, or those which point to some other portion of the body as the seat of disorder.

The next point in the doctrine of M. Broussais is the existence of *carditis* as a secondary affection: and this does not find greater favour with our author than the first proposition. He denies that the mere acceleration of the pulse is indicative of an inflammatory condition of the heart. Nor do the sequelæ of fevers show that it had existed during their continuance. In rheumatism of the heart, with increased frequency of the pulse, there is inflammation, and the majority of cases of chronic affection of the heart, which have fallen under the notice of Dr Brown, are referrible to that complaint, while he scarcely ever met with it as an effect of fever. Post mortem examinations equally fail as a general rule in indicating *carditis*. "Many cases" says the doctor, "have I examined most carefully, in which there were no traces of inflammation of this organ; and the same has happened to others." He admits, however, that authors of unquestionable discernment and good faith, have found marks of affection of the heart in dissection of those who have died of fever: and upon a careful examination of these cases, he admits, that in some "there does appear to have been inflammation of the lining membrane of the heart, with a similar affection of that of the aorta: but in most of them the affection seems to have been the mere result of impaired nutrition in diseases of long standing, softness and flaccidity of the organ being the morbid change discover-

ed, with a brownish appearance of the lining membrane, probably from that stasis of blood in the capillaries which is so generally observed in fevers."

In addition to the reasons above assigned for withholding our assent from M. Broussais's doctrine, the author states two facts, which he considers in direct opposition to it, and "the bare enunciation of which will suffice to shake our confidence" in its correctness. These he throws in as a kind of surplusage; for "in a discussion of this kind, it should be remembered that the burthen of proof rests with the propounder of the theory," and the reader may be spared the trouble of "a host of *positive* arguments" which might be advanced against it. The facts alluded to are the speedy removal of fever—sometimes in less than forty-eight hours—by the cold affusion; and the effect of the arsenical solution in curing ague. In reference to the latter fact, we shall quote the words of the author:

" 'Each regular paroxysm of intermittent fevers,' says M. Broussais, 'is the sign of a gastro-enteritis of which the irritation is transferred to the cutaneous exhalents, which produces crisis.' 'If arsenic' says the same author, 'is not promptly fatal, it excites inflammation of the gastric passages in shades, which vary according to the dose, and the idiosyncrasy.' I should like much to listen to the special pleading by which M. Broussais would endeavour to reconcile these propositions with the known effect of arsenic, in preventing the recurrence of the paroxysms of intermittent; the prevention of inflammation of the digestive canal by a mineral whose peculiar effect it is, on his own showing, to produce inflammation."

Having cleared the way by an examination of the opinions of others, the author gives his own views of the pathology of fever. The poison having entered into the circulation comes into contact with the various parts of the system, upon which it exerts a direct influence. Among the first and most obvious of its effects, are those produced upon the general nervous system. In some instances the patient is almost struck dead, as by a blow, and the system never rallies. These, however, are extreme cases, to which the author has recourse, simply to illustrate and enforce his proposition, not to exemplify the ordinary operation of the poison. The phenomena of common

remittent, and even intermittent fevers, demonstrate, in his opinion, that the nervous system is affected from the very commencement of the disease. From what other source proceed the giddiness and pain of the head, the incapacity of attention, the ringing of the ears, the aching along the spine, the chilliness and rigors with which fevers open their attack? This sensorial disturbance continues to a greater or less extent throughout the course of the disease, and is often especially exhibited in the latter stages. At the commencement the symptoms are those of depressed sensorial power; and if inflammation of the brain sometimes makes its appearance towards the close, it may be ascribed to the new irritation or disturbance of the organ consequent upon its primary depression. But the author does not claim priority for the affection of the nervous system: he only maintains that it is not second in point of time to any other affection; and thinks that a little attention to the cause of fevers and the effects of remedies upon them, will show that it yields to none in practical importance. The vascular system may be affected by the poison at the same time with the sensorial, and by the same immediate operation. The disturbance, therefore, of the circulation is equally a primary effect with that of the brain and nerves: but the reciprocal dependence of all parts of the frame is such, that we cannot conceive of these two systems as each having its own insulated morbid process throughout the course of a protracted fever. They mutually influence each other; "though this dependence is not so essential as to preclude the possibility of a preponderance of the disorder of one system over that of the other, as sensorial excitement and nervous irritation over muscular disturbance. It may be remarked, however, that when the nervous depression is great, there is generally a proportionate depression of the circulation."

The disturbance in the vascular system is accompanied by inflammation, the most usual seat of which is in the brain, the bronchial lining, the liver, the stomach, and intestines. "These do not appear to be the cause of the fever, but are occasional and important concomitants. Their detection frequently requires diligent investigation, and their existence always vigilant attention." It is our duty to controul and even to subdue them, if we can do so consistently with prudence;

but "it is one thing to subdue these inflammations and another to cure the fever."

"The nervous and vascular functions being thus disordered, those of secretion, assimilation and nutrition must follow in their train, and the disease becomes one of the whole system in every kind of sense. At the commencement of the disease there is prostration of strength from the action of the poison on the nervous system; at the close there is positive debility, at once from defective nutrition, and the agitation of the previous storm."

Before closing the subject of the pathology of fever, it is proper to give the author's views relative to that condition of things which often occurs in the first stage of fevers, more especially those of the typhoid character, sometimes also in their course, and which it is now fashionable to designate by the name of the congestive state. This term is applied under the impression that the accumulations which take place in the great internal veins, are the main cause of the symptoms, and the chief source of danger. Dr Brown however believes that the venous congestion which takes place, is in fact the result of the enfeebled action of the heart, consequent either upon the depression of the sensorial power, or the direct operation of the poison. This is an opinion which we have long maintained, and which appears to us almost too obvious to require support. The heart acts with diminished vigour; the arteries do not receive their usual supply; the blood, therefore, necessarily accumulates in the venous system; and we have congestions of the vena cavæ, the sinuses of the brain, the hepatic veins, and the whole extent of the vena portæ. But though an effect of the enfeebled condition of the heart, congestion is unquestionably calculated to aggravate the unpleasant condition of system in which it has its origin. Hence petechiæ, discharges of dark coloured blood from the bowels, aggravation of stupor or delirium, oppressed and laborious breathing, epigastric uneasiness and distention, and vitiated secretion from the liver—symptoms which mark the congestive state in bad cases of fever. The author inquires whether the affections of the mucous membrane of the intestines, which are considered by the physiological physicians essential parts of the disease, may not in reality be dependent on the con-

gested state of the vena portæ. The acrid matter poured out by the liver, under these circumstances, must excite irritation in its passage through the bowels; and it is highly probable that the inflammation and ulceration of these parts, so often discovered in fatal cases of fever, sometimes depend upon this cause. Facts seem to support the opinion. The author has frequently observed that inflammation and ulceration of the intestinal mucous membrane, have supervened on hepatitis, in which an irritating colluvies has been poured into the bowels. The ulceration moreover is most frequently found in the vicinity of the iliac valve, "where some degree of remora would detain the irritating contents of the bowels in contact with their lining." The intestinal disease may arise in another manner from the congested state of the portal circle. The stagnation of the blood in the whole range of the bowels would naturally excite irritation in the vessels, which might readily run into the inflammatory and ulcerative processes.

In giving the above pathological details, we wish to be considered merely as representing the opinions of the author, without expressing our own full atcordance. It is desirable that the medical public should be put into possession of all that may be said on different sides of every doubtful or disputed point, so that every individual having before him the materials of an enlightened decision, may exercise his own judgment with a fair chance of at least approaching the truth.

We now come to the treatment. Dr Brown is one of that school which believes that we have not the power, in a great majority of instances, of cutting short an idiopathic fever, but only of conducting it safely to a natural termination. Violent remedies may sometimes break the association of morbid actions; but the practice is dangerous; as, if the end is not accomplished, the system is left to struggle on against the force of the disease with diminished powers of resistance. He very properly remarks, that nosological distinctions are of little use in practice; as "our business at the bed side is more with the organs affected and with the modes of their affection, than with the accurate grouping of the whole under a precise designation." In the employment of remedies he is not afraid of a name, but regards the condition of the system. In the treatment which he recommends, he differs from

the advocates of the inflammatory origin of fever, less in the character of his remedies and the mode of their application, than in the extent to which he is disposed to carry them. Thus he would cease to urge a remedy for the cure of a local inflammation when the evidences of that inflammation had ceased, even though the fever might still continue; while they who believe that the fever depends upon the local inflammation, would continue their measures so long as the general disease might remain unsubdued, considering its existence as a proof of the continued existence of the local affection.

General bleeding. This he recommends as one of the means by which the patient may be guided safely through the disorder, not as a method of immediate cure. The only fever which he has been able to cure speedily and certainly by the lancet, is the "causus, or synocha, which appears in warm climates, and seems generally to owe its origin to the stimulus of heat." It is entirely different from the miasmatic remittents of the same countries, which are much less tractable. To very copious bleeding, such as practised by the late Dr Jackson, he is opposed both from reason and experience. If it fail to cure, which it frequently does, it leaves the patient in a state unfit for struggling through the disease. One moderate bleeding at the commencement is usually sufficient. In cases attended with permanent excitement, fifteen or twenty ounces may be taken with propriety; and if the excitement continue for a day or two afterwards, the lancet may be again resorted to. "In that form of fever," the author observes, "in which the sensorial or vascular depression is great—the congestive fever of Jackson and Armstrong—the patients appear to be benefited by one very moderate bleeding at the commencement; but very rarely indeed have I thought its repetition prudent, or found, if practised, that there was not subsequent cause to regret it." Other cases in which bleeding must be cautiously used, are those of the aged, the infirm, and habitual free livers, and of those, even when not beyond the middle life, "whose minds and bodies, either from the circumstances in which they are placed, or from a natural ardour of temperament, are unceasingly taxed to the very utmost of their powers. With this latter class, to which medical men

themselves too frequently belong, we must deal tenderly, or the mischief will speedily be irretrievable." "In any fever, should the excitement be vacillating, the delirium rather of a low and muttering kind, sordes forming on the tongue and teeth, subsultus tendinum, the countenance of a purplish hue, a clammy moisture on the skin, which the taking of warm liquids readily increases to a considerable sweat, general bleeding must be cautiously avoided. Should appearances such as these be accompanied by topical phlogoses, topical bleeding will be the only form of it admissible."

Local bleeding. When inflammations attend the advanced stages of fever, leeches are chiefly to be relied on. To the head, the thorax, the abdomen, they may often be applied with great advantage; to the head in cases of delirium, whether of the torpid or excited kind, but more freely in the latter; to the thorax when bronchial inflammation is discoverable either by the ordinary signs or by the stethoscope; to the abdomen when there is pain upon pressure, and to that part of it in which the pain is most experienced. This in ordinary remittents is usually at the epigastrium,¹ in typhus as frequently at the umbilicus, or towards the right ileum.

Blisters. These may be applied to the head in the torpid form of delirium, to the chest in bronchial affection, and to the abdomen when inflammation exists. They should, however, be preceded by leeches once or twice employed. The author doubts their beneficial effects when applied to the nape of the neck, and thinks that the irritation they occasion might well be spared the patient.

Mercury. With regard to the supposed influence of mercury in the cure of fever, the author coincides with those who think that the fever does not subside in consequence of the full action of the mercury; but that the action of the mercury takes place because the fever subsides. He mentions the case of a female ill with continued fever, to whom mercury was administered without any effect till she began to convalesce, when the mouth became affected. An error in diet brought back the fever, and the ptyalism immediately disappeared. Upon her restoration to convalescence, the affection of the mouth again made its appearance. He considers that "the great control exerted by mercury, with or after bleeding, over

most of the phlegmasiæ, compared with its slight influence in fevers, tends materially to confirm the view that is taken of the distinction between these two orders of diseases. But notwithstanding his disbelief in the power of mercury to subvert the disease, he still recommends its employment in alterative doses, to correct the deranged biliary secretion, and to relieve the inflammation and ulceration of the intestinal mucous membrane which frequently takes place in the latter stages.

Emetics the author thinks occasionally advantageous at the commencement of the disease, particularly in typhous cases without epigastric tenderness. They are useful by assisting in emptying the primæ viæ, by the rousing effect of their shock, by powerfully determining to the surface, and by the general freedom they impart to secretion.

Cathartics, he thinks, are sometimes carried too far. "After emptying the intestinal canal at the beginning of the complaint by calomel, combined with colocynth, jalap, or some other active cathartic, it seems sufficient during its progress, along with alterative doses of calomel, to administer castor oil or the neutral salts, when there is any deficiency in the alvine discharges; unless the bowels are not found amenable to these mild measures, when colocynth, senna, or some active purgative may be employed."

The *sulphate of quinia* he has found the most certain remedy in intermittents. He seems to be no friend to active stimulation; but occasionally finds wine advantageous. "In some cases of protracted fever, the system will appear to vacillate for some days on the confines of convalescence, without actually attaining it. The symptoms are much mitigated, but have not totally ceased. There is no restoration of appetite; the tongue is dry, and perhaps a little sordes adheres to it and to the teeth; the pulse probably does not exceed eighty, and is feeble; there is some slight subsultus; the hearing is not perfectly restored; delirium cannot be said to exist, but questions are not readily understood, and are consequently slowly answered; the countenance is vacant and the eye wandering; the temperature of the surface is rather below than above the natural standard. In cases like this, a moderate quantity of wine really acts like a charm, and appears to produce convalescence, sometimes even in a few hours." The

author is strongly opposed to the use of large quantities of wine or other stimulants, when there is reason to apprehend that depletion has been carried too far. "Such practice wrings from the patient most debilitating sweats, and speedily exhausts the little strength which the former error had left." Small quantities of wine, with light nourishment, free ventilation, extreme cleanliness, or small doses of opium, or hyoscyamus in camphor julap, are the remedies he recommends.

Narcotics. The author describes minutely a state of fever occurring more frequently in females than males, in which the affection of the nervous system greatly preponderates over that of the vascular, and in which he finds very great advantage from the use of opium in small doses frequently repeated. The pulse is frequently calm, scarcely exceeding ninety in the minute, through the whole course of the complaint. There is little heat of surface, little derangement of the urinary secretion, and the affection of the head seldom amounts to delirium. But the sensibility is excessive; the slightest noise is distressing; sounds imperceptible to others are distinguished by the patient; and the watchfulness, tossing and restlessness are much complained of. The hepatic secretion is generally deranged, and there is usually some affection of the bronchial and intestinal mucous membranes. "The cases are exceedingly lingering, frequently lasting nine or ten weeks." Besides opiates, the author recommends leeching to the head, chest, or abdomen, laxatives, alterative doses of mercury, and a cooling regimen. Sometimes, towards the close of a much more virulent form of fever, a state of things occurs which is very much benefited by opium. It is marked by a subsidence of vascular disturbance, and the occurrence of an incessant vivacious delirium, particularly at night," attended with subsultus tendinum and jactitation. The pulse is soft, weak, and not very frequent, and the skin tolerably cool. Along with the opium he usually allows a little wine. From the character of the symptoms and the effects of the treatment, he is disposed to consider the affection analogous to delirium tremens.

In his sketch of the treatment of fever, of which the above is an abstract, the author does not pretend to detail the whole routine of practice, but merely touches on the more prominent points with regard to which there is room for difference of opinion,

With regard to inflammation, the author says little that is not already familiar to the profession. We shall content ourselves with the following extract, in which the reader is cautioned against a too free use of the lancet in the inflammatory diseases of certain individuals.

“There are persons who, from a natural thinness or weakness of the parietes of the heart, have constitutionally a very languid circulation. To an ordinary observer they will often appear strong and robust, for they are frequently large and florid; but their freshness and colour will generally be observed to have a purplish tinge, as if depending on venous plethora; and their fleshiness will be found to be rather cellular and adipose than muscular. On exertion, they are readily out of breath. If their circulation be examined, the pulse at the radial artery will be found small and weak, and the heart, explored under the left mamma, gives a feeble impulse. A heart like this, naturally too feeble, may be reduced to such a state of debility by very large bleedings, as to be totally unfit for the office it has to perform. If I mistake not, the death of a medical man in London, which from a peculiar circumstance connected with it produced some sensation, arose from bleedings too large, which a structure such as has been described ought to have forbid. Inflammation is perfectly compatible with this structure, and must be subdued by the appropriate remedies; but still I hold that not a drop of blood should be shed that can be spared.”

In the essay upon rheumatism, the chief point of interest is the opinion strongly expressed by the author, that even in the most inflammatory forms of this complaint, direct depletion should be cautiously practised. “We cannot,” says he, “attempt to cure rheumatism by bleeding and other evacuants, without imminent risk of causing metastasis of the disease to an important internal organ, most commonly to the heart, its investing membrane, or both.” He admits that translation to the heart will sometimes occur, even when evacuants are altogether abstained from: but goes on to say that all the cases of speedy ~~fatality~~ which he has observed have occurred after copious depletion. Sometimes the disease attacks the heart without relinquishing its hold upon the external parts. In either case, whether the heart or its investing membrane is affected, “we have no refuge but in those decided depletory measures which are so much deprecated in the primary attack.” But, notwithstanding his dread of copious deple-

tion, he is unwilling to join with those British practitioners who recommend the use of bark and other tonics in inflammatory rheumatism. A moderate antiphlogistic treatment he has found best adapted to the disease. "From one moderate bleeding no inconvenience will be found to result to a person not above middle age; but we should not think of repeating it, nor of making that one so large as we should in an internal inflammation in the same individual. Local bleeding, when the inflammation dwells long in any joint, may be safely and profitably employed."

We are convinced that, however this exceeding caution may be suited to the disease as it occurs in Great Britain, it is inapplicable to the ordinary inflammatory rheumatism of this country, in which it is often necessary to push the lancet much further than accords with the recommendation of the author. Still the caution is valuable; as this form of inflammation is certainly more disposed to change its point of attack, and assault the vital organs with dangerous violence, than most other phlegmasiæ; and the experience of every physician in extensive practice must have furnished him with instances in which metastasis of the disease from external to internal parts, has been apparently the result of very copious depletion.

In diseases of the heart the author appears to have had large experience, and most of the remainder of the volume is occupied with his treatise on this subject. A close analysis of this essay, with a compendious account of all that it contains, would lead us quite beyond reasonable limits; and we shall content ourselves with referring our readers to the work of Laennec, republished in this country, for most of the important facts detailed in it, as also to the reviews in preceding volumes of this Journal of Mr Adams's paper in the Dublin Hospital Reports, and of Testa's valuable work. We shall, however, run rapidly over it, and select as we go such facts and remarks as may seem to us at the same time valuable in themselves, and worthy of notice as proceeding from the author's own experience or reflection.

These generally relate to affections of the heart arising from translated rheumatism. The attention of the profession appears to have been first called to this subject by Mr Dundas,

in a paper published in the first volume of the *Medico-Chirurgical Transactions*. The disease has been subsequently noticed by other English authors, and is familiar to many American practitioners. Several cases of it have fallen under our own observation. It is rather singular that rheumatism should have been overlooked as one of the causes of diseased heart by such men as Laennec and Bertin; perhaps it is less operative in France than in this country or Great Britain. Dr Brown observes, that he "has estimated at one half the proportion of cases attributable to it;" and, judging from our own experience, we should be inclined to the opinion that the proportion is at least equally large in the United States. We have before stated the opinion of the author, that too copious depletion is apt to produce a transfer of rheumatism to the heart. He thinks that neglect of the disease is very liable to be attended with the same result, except that in the latter case the complaint of the heart is more apt to assume a chronic form. Some of the worst cases he has witnessed have been in sea-faring persons, who are frequently without the benefit of medical assistance during their voyages; and, on reaching their port, too frequently neglect to avail themselves of it when required. "The labouring classes generally, as being more exposed to the causes of rheumatism, and less likely to attend to the necessary seclusion during its attacks, and more so to neglect the first indications of the heart's being assailed, present the greater number of deplorable cases of cardiac disease from this cause. But those in more affluent circumstances are by no means entirely exempt from it." With this experience of the author our own observation does not agree. Of the cases which have come under our notice, the majority have been in children who had been exposed to no hardships, and had been carefully and tenderly nurtured. The author states that "scarcely any age is exempt from disease of the heart from this cause. I visited lately a boy twelve years old, labouring under that form of cardiac disorder termed hypertrophy. I learned that he had been subject to rheumatism from his ninth year, and to use his mother's expression, 'the beating of the heart began with his first attack of rheumatic fever, and had been increasing ever since.' For obvious

reasons such occurrences are much more frequent in older subjects." On this point we can only say, that of six or seven cases which we recollect to have witnessed, only one was in an adult, and in that instance the patient was a female.

Rheumatism attacks either the pericardium or the substance of the heart itself. When the translation from external parts has been sudden, and death has speedily ensued, dissection exhibits abundant evidence of inflammation of the investing membrane. The internal surface of the pericardium is found covered with a layer of coagulated lymph, by which the cardiac portion is loosely agglutinated to that part of the membrane which in the natural state lies loosely about the heart. The muscular substance of the heart has a blanched appearance, and effused lymph is discovered upon the lining membrane, adhering to the valves and the chordæ tendinæ. The chief seat, however, of the inflammation is in the pericardium.

The symptoms of pericarditis are usually considered as very obscure, and its diagnosis difficult. Laennec has witnessed all the symptoms attributed by nosologists to this disease; and yet, upon post mortem examination, has discovered no trace of it; while in other cases dissection has revealed to him the existence of severe pericarditis, which he had not suspected during the life of the patient. Dr Brown mentions the following as the symptoms which he has observed in all the unequivocal cases of the acute form which had fallen under his notice. These cases, with one exception, arose from rheumatism; in all the symptoms were alike. "These were acute pain and sense of heat in the region of the heart; great difficulty of breathing; extreme restlessness, anguish and anxiety; the patient lay on the back and could not for a moment alter his position to the left side; the face was anxious and pale, or if flushings occurred, they were very transient, and it was bedewed with perspiration; there was frequent disposition to syncope. The action of the heart was in every case bounding and forcible, and the pulse strong, full and frequent. In no other cases have I observed in an equal degree that rising of the jugular veins synchronously with the systole of the heart, which Mr Lænnec appears to consider distinctive

of hypertrophy of the right ventricle. This rising is, in these cases, not confined to the external, but is equally perceptible in the internal jugular."

The author informs us that he has never yet observed this form of diseased heart from translated rheumatism, excepting when free depletory measures, the hot bath, or both had been employed for the primary affection.

But when it has once occurred, the most powerful depletory measures present the only chance of saving the patient; and the earlier they are applied, the greater is the prospect of this fortunate, though rather rare result. The author records one case, in which a very large bleeding, immediately upon the occurrence of the symptoms, proved effectual. The patient was a stout country girl, for whom the warm bath was prescribed as a remedy for an attack of acute rheumatism, under which she laboured. Within ten minutes after leaving the bath, she was seized with violent pain in the region of the heart, attended with the most distressing dyspnoea, frequent sighing and fainting. The pains and inflammation had almost entirely disappeared from the extremities. Thirty ounces of blood were immediately abstracted from a large orifice in a vein of the arm:—the symptoms were speedily relieved; and by the use of digitalis, the cure was completed in a few days. No return of the disease to the extremities took place.

When, instead of spending its force upon the pericardium, the rheumatism attacks more especially the muscular substance of the heart, the disease is much less acute and violent than in the preceding case, and usually much less rapid in its progress. Its duration is various—from a fortnight to several years. Hypertrophy, with dilatation, is the particular form of the affection which has most frequently fallen under the notice of the author. "This disease occurs in cases in which the primary one has been treated by bleeding, but likewise very frequently when that remedy has never been employed: and the primary affection is persistent in the joints for some time after its occurrence; indeed, this affection remains during the whole of its existence, unless the affection of the heart degenerate into a completely chronic form." The doctor is unwilling to consider this form of the disease, as strictly speaking, a metastasis of the rheumatic affection. There is not, as

in the former case, a sudden cessation of external pain and inflammation upon the occurrence of the cardiac affection: though if this "receive a sudden increment in its course, as it occasionally does, there is generally a perceptible diminution of the affection of the joints."

Occasionally the attack is open, and cannot be overlooked. The symptoms by which it may be recognized are violent palpitation, pain in the precordial region, and frequently at the inferior angle of the scapula; pulse hard, full, and in the absence of the palpitations, very slow; great anxiety, and some degree of dyspnœa. If the disease in this stage be neglected or imperfectly subdued, the heart becomes hypertrophied, and occasionally affected with other lesions of structure, in a few weeks." It can, however, generally be repelled, if promptly attended to. The remedies recommended by the author are general and local bleeding; counter irritation by blisters and setons; digitalis; and mercury pushed so as to affect the mouth. "The diet should be as unstimulating and innutritive as is consistent with the necessary demands of the frame, and so arranged as not to be calculated to distend the vascular system with liquids; and the greatest stillness of body and mind should be observed." In this, as in all other diseases of the heart, "one great rule is, to give the organ as little as possible to do; and this object should be steadily kept in view in all the means we adopt; for, without it, all other means are nugatory. By hygienic arrangements—by keeping the volume of the circulating mass at a low ebb—by cautiously avoiding all irritants of the organ, we may frequently, especially in young subjects, cure the disease almost without medicine."

The above remarks are especially applicable to cases in which the disease is well marked, and obvious at its origin. "But frequently the attack is very insidious, and the progress of the disease exceedingly slow, enduring indeed for years. The early symptoms generally commence during a rheumatic attack; but they are so obscure, that they are little heeded by the patient, and probably not mentioned to the medical attendant. The first symptom is usually palpitation, to which succeeds very slight, dull, and obscure pain, generally felt in the precordial region, at the inferior angle of the left scapula, or in both situations." The rheumatic symptoms at length dis-

appear, and each successive diminution of them is marked by an increase of the cardiac affection. Exertion now becomes irksome, and if persevered in, produces distressing palpitations, attended with a pulse either unduly forcible and frequent, or small and irregular. Even when the patient is perfectly tranquil, "a certain degree of excess of force in the action of the heart will be perceptible." Giddiness and dyspnœa are experienced; and the irritation often extends to the liver or stomach, producing biliary derangement, and tenderness in the epigastrium. If not now arrested, "the disease proceeds to those violent beatings of the heart, the extreme difficulty of breathing, the dropsy, and all the distressing and uncontrollable symptoms which characterise the last stage of hypertrophy. It may be years ere it attain this stage; and with prudent management, an individual, whose circumstances allow a life of leisure, may pass in tolerable comfort to a good old age, although he be affected with the chronic form of the disease." When the symptoms are those of hypertrophy, and there is excess of power in the heart, the remedial and dietetic measures should be those adapted to inflammation. They are the same in kind with those recommended in the more open form of the complaint; but are to be regulated in degree by the circumstances of the case. The author places great reliance upon mercury, the power of which, he observes, is wonderful in these cases. Its effect has frequently surpassed his most sanguine expectations; and he advises that we should not despair of administering it with benefit, unless in cases of extremity.

When the disease is in the form of passive dilatation or aneurism, with sufficient power of the heart, though it has the same origin, it requires, when fully established, a very different treatment. We have in this case two conflicting indications, viz. to prevent or remedy plethora, and to support the power of the heart. An occasional *small* bleeding has been found useful by the author in diminishing plethora, and relieving the difficulty of breathing; but venesection must be rarely and sparingly practised. The uneasiness in the hypochondriac or epigastric regions, induced by the turgescence of the venous system in those parts, is best relieved by leeches, blisters, with a moderate quantity of blue pill, and a small pro-

portion of calomel. The author has found a spare diet, with a proportion of animal food, and as little liquid as possible, best adapted to this form of disease. "The patient will not bear the rigid diet of the former state." When the action of the heart has been very feeble, he has found himself obliged to allow a little stimulus, and has preferred spirit and water, "as having the least tendency to induce plethora."

In diseases of the heart generally, the occurrence of dropsical effusion often produces great amelioration of the cardiac symptoms: and if the kidneys can be excited so as to carry off the effused fluid, very great relief may be expected. For this purpose, Dr Brown employs squills, with a small proportion of digitalis, in cases of passive dilatation; and in those of hypertrophy, gives the digitalis more boldly. "Should we fail to excite the action of the kidneys, recourse must be had to hydragogue purgatives, for the evacuation of the accumulated fluid."

"Opium, which, in combination with calomel and antimony, we may administer fearlessly and beneficially in hypertrophy, must be cautiously and sparingly used in passive dilatation." The author has "seen alarming and heard of fatal effects from a full dose. The reason is obvious; it diminishes further the already too feeble action of the heart."

Sympathetic disorder of the heart is treated of in a distinct essay. By a sympathetic affection, Dr Brown means "some disorder of an organ, so far dependent on a disorder of another organ, that if this were to cease, the former would no longer exist. There can be little doubt," he observes, "that in the case of the heart, as of other organs, these sympathetic affections, long continued, may attain an independent existence." The following symptoms, singly or in combination, are considered as indications of this sympathetic disorder;—"palpitation, intermittence of action, pain in the region of the heart, and occasionally a tendency to syncope; and these may be induced by physical lesions of the brain and spinal marrow, by mental emotions, by disorder of the digestive organs of the uterus, and perhaps we may add, of the urinary apparatus." The degree to which irregular action of the heart is perceptible to the patient, depends greatly on the sensitive state of his nervous system: and dyspeptic or hyste-

rical persons often complain of distressing palpitations, "when in truth the heart's action, explored by the stethoscope, though found to be frequent, forcible, or irregular, is by no means very considerably so." In this respect, there is a marked difference between the sympathetic and organic affection of the organ. The kind of intermission observable in these cases is also different from that which occurs when the structure of the heart is materially affected. In the former case there is "a simple absence of a complete pulsation, returning at intervals of varying duration," and we never find that kind of irregularity peculiar to the latter, "in which the heart makes unavailing struggles to empty its cavities, and produces under-beats scarcely to be detected by the finger of the observer." The sympathetic irregularity is also remarkable in being immediately perceived by the patient; while that attending the organic disorder generally escapes his notice. Another point of distinction between the two forms of disease is the frequent total absence of all indications of cardiac affection, which we so frequently find in the sympathetic disorder; while "in the idiopathic form, some deviation from the healthy rhythm, force, extent, or sound of the heart's movements will generally be perceived in moments of the greatest calm." The concomitant affections, moreover, tend to throw light upon the real nature of the disease. But we have not space to follow the author through his account of the various morbid conditions of the system which are most apt to excite irregular action in the heart, nor to detail the treatment adapted to each case. If the physician is able to distinguish the sympathetic affection, he will find little difficulty in detecting its cause; and he will then be guided by his previous knowledge in the application of the remedy.

The next essay is on the subject of *ichuria renalis*, and consists chiefly of the details of cases of that disease which came under the notice of the author. In the first case there was a total suspension of the secretion of urine for more than six days. The attack commenced with some pain in the iliac region, which subsided and returned several times during the course of the complaint. There was no tenderness upon pressure on the region of the kidneys; no fulness of the hypogastrium; and upon the introduction of the catheter, no urine

flowed from the bladder. There was every reason to believe that the secretion was wholly suspended. The pulse was in the early part of the disease full, and rather hard, but not frequent. Blood drawn from the arm was very sizy. The patient, who was seventy-three years of age, had previously enjoyed good health, and had not been subject to gout or gravel. The treatment consisted in two bleedings, one of which was copious; the application of leeches to the loins; free purging by means of cathartics taken into the stomach, and enemata of oil of turpentine, castor oil, senna, and salts thrown into the rectum; a blister to the loins; and the use of calomel and squill. The blister was dressed with mercurial ointment. As soon as the mercurial fetor was perceived in the breath, the kidneys began to resume their function; and the patient gradually recovered. In the treatment of the case, Dr Brown "acted on the presumption of inflammation existing.

In a second case, the urinary secretion was absent more than eleven days, and yet a recovery took place. The treatment is not detailed. We may infer, however, that the depletory plan was employed, as we are told that the affection was inflammatory, and that "blood taken from the arm displayed a strong buffy coat. The patient was subject to gout, and died eight years afterwards of this complaint, after an illness of eight days. About twenty-four hours before his death the gout suddenly attacked the kidneys with excruciating pain, and from this period the urine ceased to be secreted, as none was discharged; and not a single drop was found in the urinary organs upon dissection. Decided evidences were presented of inflammation having existed in the external surface of the kidneys, and "their cortical substance was peculiarly pale, and as soft as the spleen."

A third case which the author witnessed proved fatal: and in this instance also "the blood drawn from the patient presented a fibrinous coat, as strong as that exhibited in pleurisy and rheumatism." There was, however, little or no pain.

From the presence usually of more or less pain, from the sizy appearance of the blood, and from the evidence afforded by dissection, the author is disposed to consider the affection inflammatory. We have no doubt that the secretory office of the kidneys is occasionally arrested from this cause: and in

such instances cures may probably be effected in a majority of cases, by a judicious use of antiphlogistic measures; but we also believe that a paralysis of these organs may take place without inflammation, and cases of this kind we should consider most hopeless.

Dr Brown was not sensible, in the cases which fell under his observations, "of any urinous smell of the perspirable matter, nor was there any vicarious discharge." In only one instance did he witness coma, which Sir H. Hallford found to be a usual concomitant of the disease, as observed by him.

The last essay in the work is devoted to the subject of stricture of the sigmoid flexure of the colon. The author has frequently witnessed the disease, and has found it uniformly fatal—though the period of its duration is sometimes much protracted. In one case, he found "from a very distinct narration, that this period had embraced eleven years." As it is important to the physician to be able to form a correct diagnosis in such cases, we shall quote the author's description of the progress of the disease, premising, upon his authority, that though other writers have noticed the complaint, "such a detailed enumeration of its general symptoms has not anywhere been given as to render its real situation and nature easily discernible during the life of the patient."

"The symptoms are such as would naturally spring from a slowly but steadily encroaching contraction. At first there is difficulty, but that not very considerable, of regulating the bowels; with occasionally a slight feeling of uneasiness and aching in the left iliac region, extending thence a little below the umbilicus, towards the ilium of the opposite side. This difficulty, however, goes on increasing; purgatives are constantly varied in kind, and increased in strength; but though evacuations be obtained daily, they are small, liquid, and unsatisfactory. With the augmented difficulty of regulating the bowels, there is an increase of the feeling of distention, with flatulency, furred tongue, and inappetency. At length the purgatives cease to act, and then there is distressing pain in the abdomen, which becomes extremely distended. This distention can be distinctly traced from the left flank, running across the upper part of the abdomen, immediately under the stomach, to the ilium of the opposite side, and in this direc-

tion the pain is now experienced." The cæcum is also very perceptibly distended, and is often the seat of severe pain. The rectum, upon examination with a bougie, is found perfectly free from obstruction. Vomiting now takes place, and even the contents of the bowels may be discharged in this way; but the patient rarely sinks under the first severe paroxysm. "A calm generally ensues, purgatives resume their power over the bowels; the tension of the abdomen is diminished; and he is restored to *comparative* health. After an uncertain period, perhaps from a month to seven weeks, accumulation again occurs, with a renewal of all the violent symptoms. This alternation of comparative calm, or paroxysms of intense pain and vomiting, may exist for a considerable length of time, even for a year, or double that period; but ultimately, existence is terminated most commonly by the bowels giving way, and their contents being effused into the peritoneal cavity; though occasionally, the patient sinks previously to the occurrence of rupture and effusion."

Upon examination after death, a stricture, from one to four inches in length, is found at the sigmoid flexure of the colon. The structure of the intestinal coats at this place is entirely changed, and the calibre so much diminished as hardly to admit the passage of a crow-quill.

The means which the author has found most effectual in palliating the symptoms and checking the progress of the complaint, are a light unstimulating liquid diet; mild enemata in the early stages; afterwards purgatives, varied according to the stage of the disease; bleeding in plethoric patients during the painful paroxysms; and a moderate mercurial action. This last he has found more permanently beneficial than any other remedy; yet the relief is still but temporary. Leeches he has repeatedly applied, but without "any decided benefit to the uneasy feelings of the patient, or much influence over the progress of the complaint." Nevertheless, they are the remedies upon which, with a properly regulated diet, and laxative medicines, we should place most reliance. The author applied them over the sigmoid flexure; would they not be more effectual if applied to the anus?

In the above sketch of the contents of Dr Brown's work, we have in many instances omitted critical remarks, which

suggested themselves to our minds; preferring to occupy the space allowed us with the facts and opinions of the author, and leaving the reader to make his own inferences. Were the book generally attainable in this country, we might have contented ourselves with reference to its pages, in many instances in which we have given an abstract or quotations;—but as a review is the only probable medium through which it will reach the majority of our readers, we concluded that the original matter it contained was too valuable to be lost for the sake of comments, of which the utility, if not correctness, might be at least uncertain.

ART. III.—ANDRAL ON DISEASES OF THE CHEST.

Clinique Médicale, ou Choix d'Observations recueillies à l'Hôpital de la Charité (Clinique de M. LERMENIER). Par G. ANDRAL, Professeur à la Faculté de Médecine de Paris.

Clinical Reports, or Selected Cases drawn from the practice of M. LERMENIER, in the Hospital of La Charité. By G. ANDRAL.

[Continued from Vol. X, page 325.]

In continuance of the analysis we commenced in a late number of this Journal, we now take up the second volume, the larger portion of which is devoted to the investigation of the phenomena connected with pulmonary consumption. The subject is confessedly of great interest, and though the British press has teemed with innumerable essays, for more than one hundred years, it is questionable whether any material advance has been made in the pathology and treatment of the disease since the period when the *Phthiscologia* was published by Morton.

No circumstance connected with phthisis is more remarkable—
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ble than the appearance in the lungs of those small white bodies which have received the appellation of tubercles. The nature and seat of these tubercles constitute the first object of inquiry to which Dr Andral directed his attention. In their primordial state he describes them as resembling small drops of pus, both in colour and consistence. In proportion as the more fluid part is dissipated or absorbed, they acquire a greater consistence. In this condition they present a round or oval figure, and have their texture easily broken. These bodies may be disseminated through the substance of the lungs, or they may be agglomerated in masses occupying one or more lobules. On one occasion he found what he considered as the matter of tubercles contained in the pulmonary vesicles, in which the minute ramifications of the bronchia terminate.

The formation of tubercles being explained as the product of a secretory process, he next inquires whether this secretion is the result of a new and adventitious tissue, or whether it may not take place in any tissue susceptible of inflammation and suppuration. He is the advocate of the latter opinion, and in support of it he adduces several observations, tending to show that the matter may be generated in the mucous membrane lining the bronchia and pulmonary vesicles, and that it may also be secreted in the cellular tissue which forms the bond of union between the various parts constituting the parenchyma of the lungs. He is disposed likewise to admit the occasional existence of tubercles in the lymphatic system belonging to the lungs.

Wherever the secretory process is rendered more active, a more abundant supply of blood will be established, or congestion will take place. In the normal conversion of cartilage into bone, the deposition of osseous matter is preceded and accompanied by an increased capacity of the vessels belonging to the part, so as to admit a current of red blood. The formation of adventitious membranes, and the production of new growths, are accompanied by similar phenomena. In the latter, the products are the effect of a certain chain of morbid actions, to which the term of inflammation has been assigned. If then a tubercle is the product of secretion,—if it is a new formed part in the midst of a particular organ, Dr Andral thinks that all the known phenomena lead to the conclusion,

that the appearance of the tubercles must be preceded by an active congestion of fluids in the affected organ. Still, however, he does not consider such congestion as constituting real inflammation. According to him, it is a pathological condition, connected with a particular disposition in the part leading to the formation of pus, adventitious membranes and tubercles, according to the nature of that disposition. If the specific disposition is strongly marked, then the slightest congestion will suffice for the formation of the morbid product, wherever this congestion is established. Under such circumstances the appearance of tubercles has been referred to a particular diathesis. When this diathesis is less strongly marked, a more active congestion, amounting to inflammation, must precede the formation of tubercles. But should it not prevail, then the most intense and long continued inflammation would be insufficient to their production.

The granulations noticed by Bayle, and considered by Laennec as incipient tubercles, have, in the opinion of Dr Andral, a totally distinct character. According to him they are the result of the inflammation and induration of the pulmonary vesicles, while the interstitial cellular tissue remains perfectly sound. The artificial division, or tearing of the lobules, occasions these inflamed vesicles to appear in the form of red or grey granulations, distributed through the parenchyma of the lungs.

The symptoms of pulmonary phthisis are divided by our author into those which indicate the first approaches of the disease, and into those which are observed in its more advanced period.

The general inadequacy of all our therapeutic measures to exert any positive control over pulmonary tubercles when once completely developed, has been often acknowledged by the profession. The triumphs obtained over the disease have been few and questionable, and the insanability of consumption has become almost proverbial. We turn, therefore, our attention to the studying of the incipient or forming stage of the disease, as affording the fairest hopes of warding off the fatal consequences of this dreadful malady.

According to Dr Andral, before the signs which indicate the existence of pulmonary tubercles are noticed, one of the

following morbid conditions may be generally observed:—1. A simple inflammation of the mucous membrane lining the air passages. 2. One or more attacks of hæmoptoe. 3. An inflammation of the parenchyma of the lungs, or of the pleura.

The inflammation of the mucous membrane, which precedes the formation of tubercles, is not uniformly located in the bronchia, but may be observed to commence at the superior extremity of the tube leading to the lungs, and to be accompanied by the symptoms of simple laryngitis. Hoarseness, sense of stricture and uneasiness, rather than pain, first referred to the larynx, then successively down the trachea, attended by pricking and soreness behind the sternum, some uneasiness in swallowing, frequent harassing fits of coughing, are noticed as the symptoms denoting this particular form of disease. These symptoms persisting for some time, there will supervene disturbance in the circulation, emaciation, and all the ordinary indications of pulmonary consumption.

In some individuals, after the continuance of simple bronchitis, either badly treated, “or resisting the most appropriate means,” the respiration becomes embarrassed, a slight fever is observed, emaciation takes place, and the existence of tubercles in the lungs remains no longer doubtful. This disposition to the development of tubercles appears to be connected with a scrofulous habit, with a residence in cold moist places, and with the habitual omission of exercise in the open air. Instances, however, do occasionally present of individuals who have recovered from repeated attacks of bronchitis without exhibiting, on these occasions, the slightest disposition to phthisis, they being cut off by the disease at an advanced period of life; and in such persons, after death, tubercles have been detected in the lungs.

In the latter cases Dr A. thinks that the tubercles must be considered as the product of previous inflammation. In those individuals who are prone to repeated bronchitis, and whose recovery has been protracted and accompanied by considerable irritation of the system, a question arises, whether these attacks of bronchitis have not been favoured by the presence of tubercles already existing in the lungs. The argument employed by him in support of the universal agency of inflam-

mation in the production of tubercles, is founded on the absolute impossibility of our adducing cases of tubercles in persons who had not previously been observed to suffer from inflammation in some portion of the lungs. We acknowledge ourselves unprepared either to maintain or to impugn the doctrine advanced by the author, and have therefore thought it our duty to present it free from comment.

Spitting of blood may be observed in different periods of pulmonary consumption, but the sanguineous discharge that will now occupy our attention is that which marks the first appearance of phthisis. Hemoptysis is often symptomatic of the existence of tubercles, but here it seems to precede their formation. Hence Dr A. notices the propriety of designating this particular species by the appellation of *phthisis ab hæmoptoe* introduced by Morton.

Our author relates that many of the consumptive patients whose cases he has recorded, stated that they had always enjoyed good health, that their constitution was strong, and that they did not cough before the attack of hemoptysis. Suddenly, while in perfect health, they were seized with a copious spitting of blood; this having gradually ceased, they still continued to cough, and by degrees all the symptoms of phthisis were developed. In other instances we are informed that it was not until after repeated attacks of hæmoptoe, and without any appearance of catarrh, that the cough was observed to continue, and that the patient became affected with phthisis. The congestion attendant on hemoptysis is considered by him as tending to the production of pulmonary tubercles.

Phthisis is often observed to come on after a pleuro-pneumonia. Here our author establishes two important distinctions. In one class the existence of tubercles has been announced previous to the invasion of the peripneumony, but being few in number and not far advanced, the tubercles are not accompanied by severe symptoms. An habitual cough, slight oppression in the breathing, and a decline of flesh, might render their existence suspected, but the patients are not confined to the house, and are still capable of pursuing their ordinary occupations. Under these circumstances, the inflammation of the pulmonary parenchyma exerting a fatal

influence, occasions a multiplication and softening of the tubercles, terminating in phthisis.

In the other class the patients are of robust frame, and exhibit not the slightest appearance of the previous existence of tubercles. After the attack of peripneumony they do not recover their strength and flesh; they continue to be afflicted with cough, either dry or accompanied by a catarrhal expectoration. Full inspiration is difficult, and the patient complains of shortness of breath. Nevertheless the dull sound on percussion disappears, and the respiratory sound becomes natural. In other instances the pneumonia may pass to the chronic state. On percussion the thorax continues to emit a dull sound, the natural respiratory sound is wanting, or is supplanted by various morbid rattles. In this class of consumption the production of tubercles is considered by Dr A. as resulting from an obvious inflammatory action. These facts are adduced by him in support of the universally inflammatory origin of these adventitious bodies.

Occasionally phthisis follows in the train of diseases in which the respiratory system is not immediately interested. The first indications of this disease are extremely obscure, and its approach perhaps not at all apprehended, until it is developed in its most aggravated form. According to our author, simple bronchitis, hemoptysis, or a slight peripneumony has generally been observed to precede the attack of phthisis. It is in this way he explains its appearance during the convalescence from gastro-enteritis; and he insists on the advantage to be derived from a strict adherence to the antiphlogistic plan of treatment. In many cases, however, where depressing moral causes were operating, and where a grateful and nutritious diet was withheld from persons, perhaps of a delicate constitution, but previously in good health, we have seen, after the prevalence of symptoms considered as dyspeptic, the full and rapid development of pulmonary consumption. Such cases, and the observations recorded by Barron on the authority of Jenner, have made us rather hesitate in adopting to its full extent the doctrine maintained by Dr Andral.

Among the exanthemata, measles is remarkable for the frequency with which it is succeeded by phthisis. Here the explanation is obvious, for throughout the progress of measles,

the bronchial are known to be the seat of very active inflammation.

In the course of a variety of cerebral diseases, it often happens that the appearance of tubercles is gradually manifested. The precise period when they begin to be detected cannot easily be determined. In a first or second stage they are referred to a simple cough, and the wasting which a patient may be really suffering in the preceding cerebral affection.

Taking all these circumstances into consideration, the simplest stage of phthisis will present very dissimilar aspects in different individuals. In this stage a correct diagnosis can only result from a very close and careful observation of all the clinical phenomena; and to obtain the correct impression must still depend of every possible means of best appreciating the various symptoms. We shall therefore endeavour to present to our readers a succinct view of those described by Dr Andral as characteristic of the disease.

Percussion of the thorax is far from affording the same degree of information in different individuals affected with pulmonary tubercles. These nodules existing either in the centre or softened state may give rise to all the symptoms of confirmed phthisis in the second or third stage, and no percussion of the thorax shall present an alteration of sound. We are informed that this perfect soundness of the chest in phthisical persons is to be ascribed to the healthy condition of the parenchyma surrounding the tubercles.

In some instances the sound character of percussion is greatly increased. The increased sonority may result from the melting down of the tubercles, and the air passing freely through the communicating bronchi. It may be owing to the dilatation of the pulmonary vessels producing an emphysema of the lungs. In the former instance, the increased sonority is partial, and is most generally observed between the clavicle and the breast. It may be perceived in the axilla, and in the space above the spine of the scapula, rarely in the space below. In these occasions the peculiarity of sound emitted from the two sides of the chest varied with other symptoms, will indicate the particular nature of the disease. Where there is extreme emaciation, the sound character by percussion will be louder than usual.

Diminution of sound is observable: 1st. When the tubercles are greatly multiplied and closely aggregated in one mass. 2d. When the parenchyma surrounding the tubercles is inflamed and indurated. 3d. When fluid is collected in the cavity of the pleura. The diminished sound resulting from the first cause, is less frequent than from the second. The tingling sound noticed by D. Martinet, *Revue Medicale*, 1825, as proceeding from a cavity containing at the same time air and a fluid, has been observed by Dr Andral only thrice, and then he was unable to determine the condition which led to the production of this peculiar sound. Sometimes the simple application of the hand enabled him to ascertain the precise seat of the cavity; a peculiar vibration being imparted to the fingers and palm of the hand whilst the patient was engaged in speaking.

The indications of the various diseases of the lungs, afforded by means of the stethoscope, are more numerous than can be conveyed to the ear by percussion. Yet the information derived through the medium of that instrument is not infallible.

The existence of tubercles in the lungs may be announced by different modifications of the respiratory sound, by the different kinds of rattle, and by the peculiar resonance of the voice perceived in different parts of the chest. Dr Andral has, however, acknowledged, that he has met with cases of confirmed consumption, in which no pectoriloquence, no alteration in the respiratory sound, could be perceived, except that species of rattle which belongs to simple catarrh.

The diminution or absence of the respiratory sound was explained in the last number of the *Journal*, as the result of an infarction or obstruction of the pulmonary vesicles, whereby the air is prevented from entering certain portions of the lungs. The presence of tubercles will often produce a similar effect, and their particular location may thus be frequently determined.

The increased intensity of the respiratory sound, occasionally observed in persons affected with phthisis, is to be explained by the augmented capacity of the pulmonary vesicles, sometimes even surrounding tubercles that are fully developed.

In consumptive persons, other modifications of the respiratory sound are frequently observed. At each inspiration the

ear perceives the sound of air penetrating the bronchia, without any addition of rattle. The air may be considered as not reaching the pulmonary vesicles. This peculiar sound, denominated by our author bronchial, indicates the mere impenetrability of the pulmonary tissue, and affords no clear intimation of the presence of tubercles. When a cavity is formed in the lungs, having a communication with a large bronchial tube, and containing but little pus, the free entrance of the air will produce a peculiar sound, that cannot easily be mistaken. This sound has received the appellation of cavernous. The mere dilatation of a bronchial tube may occasion an analogous sound, but never possessing the same degree of intensity.

These several sounds, whether vesicular, bronchial, or cavernous, may be blended with, or completely lost in, various species of rattle, resulting from the mingling of air with the fluids contained in the bronchia, or in the tubercular cavities. But in the estimation of Dr Andral, none of these rattles can be considered as pathognomonic of pulmonary consumption.

The peculiar resonance of the voice, denominated pectoriloquy, is another sign, furnished by the stethoscope, indicating the existence of pulmonary consumption. But its absence does not afford conclusive evidence that there are no tubercular excavations in the lungs. It is stated to be more intense when these excavations are severed by a condensed parenchyma, and when they are seated near the periphery of the lungs.

A shortness of breath is a frequent attendant on phthisis; yet cases do occur, in which this is not noticed by the patients. When existing, it is often increased after taking a hearty meal; and in phthisical females, it is often observable at the menstrual periods. A sudden aggravation of the dyspnœa appearing, there is reason to apprehend active inflammation of the parenchyma surrounding the tubercles. Its influence on the treatment is too obvious to be insisted on.

The immobility of one side of the thorax, when a large quantity of fluid is collected in that side, has been frequently observed. But Dr Andral notices a more remarkable phenomenon, the partial immobility of one side, occasionally observed in persons affected with phthisis. He found it, connected with a chronic inflammation of the parenchyma sur-

rounding collections of tubercles alike, whether crude or excavated.

Many have sought, in the character of the cough, for the diagnosis between simple bronchitis and the affection resulting from the formation of pulmonary tubercles. This view is in some degree confirmed by clinical observation, for in incipient phthisis, while the tubercles in the parenchyma are few, and not suppurating, there is a dry hacking cough, and the irritation is referred by the patient to the larynx. After ceasing for some time, this dry cough is more liable to relapse in persons affected with tubercles, than is generally noticed in cases of simple bronchitis. Dr Andral has, however, recorded some cases where the patient was entirely free from cough, and yet after death tubercles were found in the lungs. In the advanced stage of phthisis, the cough is accompanied by an abundant expectoration, and the matter thus thrown up has been made the subject of frequent and critical examination, in the hope of establishing a clearer diagnosis; but, as far as experience can warrant, with very little success. Dr Andral very justly remarks, that in every case of phthisis, the mucous lining of the bronchia must be more or less affected, and consequently, that a considerable portion of the sputa must present the phenomena characterising simple bronchitis, mixed at times with a white grumous matter, resulting from the breaking down of the tubercles. All the instances of the expectoration of calculous concretions that came under his notice, were in young persons. The fact is curious, and accords with our own experience.

The odour of the sputa is generally mawkish, occasionally nauseous, and in a few instances fetid; but these circumstances afford no criterion of the existence of tubercles in the lungs.

The frequent connexion between hæmoptysis and the actual or future existence of pulmonary tubercles, has been established by repeated observation. The blood expectorated may be exhaled from the mucous membrane lining the bronchia—*bronchio-hæmorrhagia*. It may be poured out in consequence of the rupture of the minute branches of the pulmonary arteries or veins, constituting *pneumo-hæmorrhagia*, *apoplexia pulmonalis* of Laennec. Or it may be found issuing from an ex-

cavated tubercle. Only in one instance was Dr Andral able to detect a vessel of any size, from which the blood was poured out. Having pointed out the sources from which the blood may be derived, he mentions as his experience, that tubercles were not present in only one-fifth of those affected with hæmoptysis. That in persons who died of phthisis, one-sixth had never expectorated blood, that in one-half the spitting of blood occurred when the existence of tubercles was no longer doubtful, and that in the remaining two-sixths, or one-third, the hæmoptysis appeared to precede the formation of the tubercles.

The hectic fever of pulmonary consumption has been fully described by medical writers, and having nothing to add to the history, our author passes it by without any farther notice.

On the examination of the bodies of those who have died of phthisis, besides the tubercles in the lungs, other lesions are frequently observed. These traces of morbid impressions, whether acute or chronic, may be manifest in different portions of the respiratory system, or in organs having no immediate connexion with the lungs.

We are informed, that in three-fourths of the consumptive patients, under the care of Dr Lermenier, the larynx was more or less affected. Of the various tissues which enter into its composition, the mucous membrane lining the internal surface presented the most frequent lesions. And in the majority of cases, the other tissues were only secondarily affected. The morbid changes observed, were simple redness, softening, increased thickness, fungous excrescences and ulcerations.

Simple redness, with slight thickening of the mucous membrane, covering the vocal chords, or lining the ventricles, produces a change in the tone of the voice.

The change of the voice produced by ulceration of the mucous membrane, is often no greater than what is observed in cases of simple inflammation, and seems to be occasioned, 1st, by the accumulation of pus and mucus in the ventricles; 2d, by the lesion, and want of elasticity in the thyro-arytenoid ligaments, occasioned by the removal of the mucous membrane. Ulcerations in other parts of the mucous membrane do not materially affect the voice. Tumours in the ventricles render the voice hoarse and grating. A general tumefaction of the

mucous membrane produces the same effect. Complete aphony follows the destruction of the thyro-arytenoid ligaments. The extinction of the voice likewise accompanies the lesion of the thyro-arytenoid muscles. We are, however, reminded, that various modifications of the voice, in force and tone, may result from mere nervous influence, without any pathological alteration of structure.

The lesions in the pulmonary parenchyma surrounding the tubercles are very frequent, and often fraught with more imminent danger than the tubercles themselves. It has already been stated, that in many instances the tubercles succeed an acute inflammation of the lungs. This inflammation may be dissipated, and in the dead body tubercles may afford the only evidence of its previous existence. But in the progress of phthisis, pneumonic inflammation may occasionally present, and these intercurrent affections hasten the fatal termination.

The lesions observed in the pleura of consumptive persons have been adhesions of various kinds; and in these adhesions, or on the surface of the pleura, tubercles have been occasionally discovered.

Effusions or collections of fluid have been noticed in the cavities of the pleura.

In the various lesions enumerated may be found a ready solution of many of the phenomena observed during the progress of consumption.

Enlargement and suppuration of the bronchial lymphatic glands are frequent in children and rare in adults. These morbid changes are not announced by any particular symptoms. Perhaps the pressure of an enlarged gland may obstruct the free passage of air through the bronchia, and occasion dyspnoea, and even some modification of the voice.

Dr Andral states that in two-thirds of those who died of consumption, the heart was more or less affected. As a caution in the diagnosis, he mentions that in consumptive persons the pulsations of the heart are often very forcible and extensive without any hypertrophy of that organ.

The frequency of affections of the alimentary canal, in consumptive persons, may be easily demonstrated by attention to the symptoms and by the examination of the dead body.

According to the observations of Dr Andral, in three-fifths

of those who died of consumption, under the care of Lermenier, decided marks of disease were found in the stomach. In many the mucous membrane was highly injected, either in an arborescent form, in dots, or in large blotches. In others the membrane had acquired a brown or slate colour, retaining its natural thickness and consistence, or having become thickened and indurated. On other occasions, and still more frequently, the membrane was softened and reduced to a pulp. Ulcerations of the mucous coat were rare. The other coats for the most part remained untouched: though occasionally a remarkable thinness of all the coats was observed. Corresponding morbid changes were observed in the intestinal canal, and only one-fifth of the persons carried off by consumption presented a sound state of the canal, extending from the duodenum to the termination of the rectum. He has devoted more than fifty pages to prove the inflammatory character of many of the morbid changes observed in the alimentary canal of persons who have died consumptive.

An acute gastritis may precede the symptoms which indicate phthisis; more frequently it is observed after the existence of pulmonary tubercles has been fully developed. On many occasions it hastens the fatal termination, and must therefore engage the particular attention of the medical practitioner.

The chronic inflammation of the stomach is of more frequent occurrence, and becomes complicated with phthisis in the more advanced periods of this disease.

According to Dr Andral, the affections of the intestinal canal have been more duly appreciated, and more correctly described. That the irritation of the intestines becomes vicarious, and frequently relieves the cough and the night sweats, is a familiar observation.

From the scrofulous character of phthisis, and from the prevalence of intestinal irritation during the progress of the disease, we naturally look for the morbid appearance of the mesenteric glands, so generally observed in persons who have died of consumption.

Among the morbid changes of the liver, he notices its degeneration into a kind of fatty matter as having been observed in one-third of the cases of phthisis under the care of Dr

Lermenier. The tuberculated condition of this viscus has been more frequently observed in children than in adults: in the latter he states it as one in fifty.

The appearance of tubercles in the kidneys and in the brain is mentioned as having been occasionally observed in the bodies of consumptive persons after death.

Having presented the principal morbid changes noticed by our author, as connected with phthisis, we believe we shall not withhold any important information if we now close the article. The observations on pleurisy, which complete the series contained in these volumes, may, perhaps, form the subject of a future notice.

ART. IV.—GROSS ON THE BONES AND JOINTS.

The Anatomy, Physiology, and Diseases of the Bones and Joints.
By SAMUEL D. GROSS, M.D. Philadelphia. John Grigg.
1830.

It has been said that the American medical public, separated by a wide expanse of ocean from the remainder of the profession, and placed beyond the influence of national jealousy or personal rivalry, may review the merits of European authors and European practice with all the coolness and candour of posterity. By adopting whatever will endure a rigid examination, and by rejecting what may be received in particular schools from the influence of national prejudice or local authority, we should be able to prosecute our researches under fewer disadvantages in some respects than our fellow labourers beyond the water. If, with the treasures of transatlantic wisdom poured into our lap from every quarter; if, with all the ardour and activity of scientific youth upon our side, we fail to increase the stores of medical knowledge, the greater condemnation should be ours.

Among the drawbacks to our success in the practice of

medicine, and more especially in surgery, we may rank that habitual confidence in our own resources, which results from the condition of society in a new country, where the sparsity of population precludes the minute division of labour; where every man is obliged to devote his attention to a variety of pursuits, among which there is little accordance.

Too many amongst us are contented with picking up a few general principles, trusting with perfect self-confidence in our ability to adapt the means to the end in all the details of practice; and perhaps there is no other country in which so many attempt to reach the high places of professional distinction by the "royal road."

But if the originality of thought and freedom of opinion, arising from such a state of things, may occasionally cast an unexpected light upon an obscure point, or introduce a valuable practical improvement—the unfortunate neglect or contempt with which it leads us to treat the labour of others, is the cause of errors infinitely more important. We suspect that in the profession of medicine, Genius will find a fearful balance against him in the last account.

These remarks apply with greater force to the state of the profession in the places most distant from our great medical schools. In our larger cities, we find profound research and erudition, combined with the proverbial shrewdness of the American character, productive of consequences which we forbear to describe, lest we should be taxed ourselves with another of our national failings—vanity.

There is no department of surgery which has received more considerable improvements from the professors and practitioners of this city, than the treatment of fractures and analogous injuries. For many years that which was considered as impossible by some of the highest surgical authorities of Great Britain, was so constantly effected in Philadelphia, that a case of simple fracture of the femur, discharged with perceptible shortening of the limb, was felt as a disgrace by the surgeon! And we may fearlessly appeal to any physiologist who is well acquainted with the direction and resolution of forces, to decide between the comparative merits of the beautifully simple dressings now employed in this school for all the varieties of

fractures, and the most perfect machines of the French,—the acknowledged masters in European surgery.

Yet we know, from actual observation, that many practitioners in various parts of our country are, in a great degree, ignorant of the management of these machines—and some of them may also be found who still advocate the use of short splints in fractures of the thigh! How shall we account for this? We think it chiefly referrible to the imperfection of our text books and home works, from which the few first principles of surgery are derived, and the inability or disinclination of most of the profession at a distance from cities to advance beyond them in pursuit of information.

Where shall we find an American work on fractures, in which even a moiety of the species of these accidents are described?

It is impossible to treat of the real nature and the proper treatment of the mechanical injuries of the skeleton, in that distinct and clear manner necessary, in an elementary work, designed for students and members of the profession removed from the grand theatres of surgical practice, without premising in each form of accident a succinct account of the anatomy and physiology of the parts interested;—yet where do you find this method pursued?

The treatise of Sir Astley Cooper upon fractures and dislocations makes a nearer approach to our beau-ideal, in its arrangement, than any other work of the kind in the English language. But even in its American dress, with all the aid of notes and additions, it is very ill adapted to the present state of surgery on this side of the Atlantic; and a good work upon the mechanical injuries of the bones and their appendages, accommodated to the practice of American surgeons, may still be regarded as a desideratum.

The work of which the title is placed at the head of this article, is not confined to the consideration of the mechanical injuries of the bones. It professes to embrace the whole field of the diseases and accidents of the osseous tissue and of the joints, with so much of the anatomy and physiology of the parts interested as is necessary to the proper comprehension of these subjects.

In a volume of three hundred and eighty pages, covering

such a variety of subjects, we could not expect any great degree of profundity. "The work," says the author, "contains little, if any thing, that is either new or unknown—It is strictly elementary, and is designed expressly for the use of students and junior practitioners."

It is avowedly a compilation, intended as a vade-mecum, and should not, therefore, be criticised with that strictness that the pretensions of its title page might incline us to employ. We shall confine ourselves pretty much to a short analysis of its contents, with occasional comments upon the degree of skill with which the labour of compilation has been performed.

The first chapter is devoted to the general anatomy of the bones, and contains, in its first section, not only the description of the external appearance, the various chemical analyses and the obvious mechanical arrangement of the substance of bones, but also a very brief account of the various views of anatomists, from the days of Haller and Dethleff to those of Howship and Scarpa, upon the intimate structure of the osseous tissue, with a short sub-section upon the formation of bone. On the first of these subjects the compiler's opinions may be inferred from the following sentence:

"The osseous texture is nothing but a kind of cellular tissue, which retains the interior form of its primitive state until the fat is deposited into its cells, when it becomes gradually hardened by its union with a gelatino-calcareous substance." P. 6.

He combats the opinion of Scarpa, that bone, deprived of its earthy matter is entirely composed of a cellulo-reticular structure. "These views," says he, "are probably correct as far as regards the original condition and ultimate analysis of bone, but they are unquestionably erroneous in reference to the state of the osseous tissue when merely deprived of its earthy matter." P. 8. Yet in speaking of the effects of maceration upon the fibres of the matter of bone deprived of earthy portions, he says, "by continuing this process the fibres will gradually become soft and swollen, and at length exhibit an areolar texture similar to the cellular tissue of the soft parts."

Now if we venture to accuse the author of some slight inconsistency in these passages, we would wish to be under-

stood as holding the compiler in a great degree blameless. From what work or works, with the exception of that of Scarpar, could he extract an account of the intimate structure of bone without inconsistencies equally glaring?

For our own part, we can see nothing properly described as a table or a fibre in the bony skeleton. In the flat and short bones, all are ready to admit that such terms are less applicable than in the long bones. What part of the latter class of organs presents a tabular or fibrous structure, properly so called? Is it the cartilage which gives shape to the organ previous to the calcareous deposition? We believe that few have attempted to establish this point, and even if it were possible, this provisional matter is not bone. Mr Howship has clearly proved that it is removed entirely before the formation of proper bone; thus displaying its true character as an interstitial deposit, and disproving in the clearest manner the rude hypothesis of a gradual hardening from mucus to cartilage and from cartilage to bone.

Again; is it in the calcareous deposit that we observe this tabular and fibrous arrangement? Let us make an unprejudiced examination of the condition of a long bone which has been subjected to destructive distillation.

We find the middle of the shaft, perforated in a direction nearly longitudinal by many irregular foramina, terminate directly or indirectly in the surface at one extremity, and in the medullary canal at the other. These foramina are much more numerous and more enlarged in certain places, and communicate so freely in all directions as to produce a reticulated appearance. If the destruction of the animal matter is incomplete, the bone gives way in these spots most readily, and a tabular fragment is the result; while the track of the more minute foramina gives to the substance the appearance of fibres. But if the bone has been subjected to heat sufficient to destroy totally the animal matter, it is reduced to a mere congeries of scarcely adherent particles, crumbling with equal ease in all directions. This proves that when the connecting medium is removed, the particles of the calcareous deposit are isolated, and incapable of forming either a table or a continuous fibre.

Are we then to search for this structure in the cartilaginous deposit? We find it admitted in the work before us, that after

the removal of the earthy matter by an acid, the apparently homogeneous mass which remains may be reduced, by long maceration in pure water, to an "areolar texture, similar to the cellular tissue of the soft parts." What is removed by the maceration? Assuredly certain interstitial parts. The remaining cellular matter is evidently the nidus of both the cartilaginous and the earthy deposits. Now we may safely put the question, whether it is possible so to arrange any species of matter within a mass of pre-existing cellular tissue, as to produce either continuous tables or fibres.

We must beg to be excused for dwelling a little on this topic, because it is intimately connected with the old hypothesis of the gradual hardening of bone, which has tended, and unfortunately still tends, to obscure the pathology of the osseous tissue. It is high time that the rude mechanical doctrines of which we have been speaking, should cease to influence the profession. The nails of Havers and the rings of Duhammel belong only to the history of surgery, and it is a matter of astonishment that they should still appear, even in a modified form, in the writings of Breschet and Dupuytren.

After what has been said, our readers will judge with what reservations we admit the account given by our author of the opinion of modern anatomists, "that ossification results from a change of nutrition in the cellular structure of the temporary cartilage, in consequence of an increased flow of blood, and that by virtue of this change the albuminous homogeneous substance of the cartilage is converted into a lamellated, gelatinocalcareous tissue." A longitudinal section of any long bone presents us with a view of the cellular structure of the extremities gradually concentrated into the solid texture of the shaft; these two portions standing in much the same relation to each other that fascia bears to ordinary cellular membrane.

The succeeding sections of the first chapter treat in a brief but perspicuous manner of the general anatomy of the different classes of bones and of their internal and external appendages.

The second chapter ushers us at once into matters of interest, more directly practical. Its first section embraces a general view of simple fractures, complicated fractures, and the formation of callus; and these subjects are treated in as clear a man-

ner as the slender allotment of eighteen pages will allow. We shall pass this section with a very few remarks upon some points of importance.

"It was formerly supposed by surgeons that pregnancy always retarded or prevented the union of fractures, and the opinion was supported with considerable warmth even by writers of respectability. It must be remarked, however, that such assertions are altogether gratuitous, and have been amply refuted," &c. P. 39.

Dr Gross, however, admits that difficulty from this condition does sometimes occur, but denies that it takes place as a "general rule." We have had occasion to observe an obvious retardation of the union of fracture during pregnancy; and indeed the process is one of so great difficulty, that any considerable irritation in a distant part, such as an erysipelatous inflammation, an irritable ulcer, &c. may not only retard it, but may even occasion pseudarthrosis, as we have several times witnessed. The like result is known to occur from the debility consequent upon a previous attack of fever, or from the too long continuance of an antiphlogistic regimen after the accident: why should not the like effects follow from pregnancy? We would caution the young practitioner (the authority of some great names to the contrary notwithstanding), that there is real danger to be feared from this source, and that prudence requires the lancet to be used only with great caution in the first stage, and the prompt administration of an invigorating diet in the second stage of fracture, occurring during gestation. But it should always be borne in mind, that where the accident is attended with injuries of the pelvic viscera, from contusion or concussion, or when it is followed by high febrile excitement, no dread of pseudarthrosis should induce the physician to run the risk of more serious dangers.

"In some circumstances, especially in fractures of the lower jaw, and in very young children, considerable advantage may be derived from splints made of common pasteboard; but in most other cases they are too thin and flexible to give any support to a fractured bone. Before applying them, they should always be carefully moistened, so that when they become dry, they shall have the exact shape of the part, and form every where a firm and solid covering, without incommoding the patient." P. 44.

We are pleased with the general disapprobation of pasteboard splints, expressed in this paragraph; but we must be permitted to carry our opposition to them even farther than our author. We will not at present consider the question of their application in the fractures of very young children. This practice is sanctioned by high surgical authority in this city, in the case of fracture of the os femoris in infants; and it is equally defensible in the fractures of the leg or os humeri in very young patients. In some fractures of a complicated character, in the immediate neighbourhood of joints, and in certain fractures of the condyles of the os humeri, we have even had occasion to resort to it ourselves; but we are compelled, having witnessed the ill effects of pasteboard splints in numerous instances, to enter our solemn protest against their employment as a retentive apparatus in any simple fracture, except those just specified. The strong ground of our objection, in addition to those mentioned by Dr Gross, is, that it is impossible in almost every case for the surgeon to assure himself of the co-aptation of all the fragments during the time that the pasteboard envelope is becoming dry and fixed. If the slightest deformity should occur during the time in which the splint remains plastic, it adapts itself exactly to the form of the displacement. The surgeon may then examine the patient frequently, and replace the fragments with the greatest care, but without advantage; for on the reapplication of the dressings the malformed splint instantly renews the displacement. The same objection holds against the plan proposed by Cowper, and resuscitated by Larrey; that of encasing the limb in compresses and other dressings, hardened by glue or albumen, a plan which we were sorry to see lauded by an American surgeon. If any parallel mode of treatment could be considered less objectionable, preference must certainly be given to the Arabian method of surrounding the limb with plaster of Paris, which hardens with great promptitude; but the one grand objection just urged precludes the necessity of considering many other important evils which such plans are likely to produce.

We cannot take leave of this section without expressing our satisfaction with our author's observations upon amputation after complicated fractures. Whatever may be the pride of

skill, or the more generous self-approbation of the surgeon in saving a limb in a condition almost desperate, we cannot but lament the great sacrifice of life and health which we have witnessed from such attempts. Certainly the loss of a member to a man in the prime of life is a less serious misfortune than the ruin of a constitution by years or even months of confinement, endured under the double depression of the consciousness that life may finish the sacrifice, and that success itself may still leave him a cripple. In the desire to avoid the danger of operating, too frequently American surgeons are led into the opposite extreme.

The succeeding section embraces all the varieties of fracture. Those of each bone are preceded by a description of the bone, and an enumeration of the muscles which are attached to it. We confess ourselves surprised that the author should have entered so much into detail with regard to the osteology, and left almost untouched the more important subject of the action of the various muscles, and their effect in producing displacement. What advantage is the student to acquire from perusing a simple list of the muscles attached to a bone, without any notice of their origin, insertion or action, and without any attempt at classification? Will it enable him to comprehend the different species of displacement occurring in fractures of the lower jaw, for instance, when the solution of continuity occurs on one or on both sides of the chin, at the chin, in the rami, or in the neck of the bone? If it will not, why is the enumeration made at all?

In describing the fractures of any particular member, we look upon it as all important to explain the action of all the muscles which influence the motions of the part, and also the manner in which their action is modified by a rupture in any part of the length of the bone.

It is impossible to point out all the varieties of any particular fracture; and the only mode in which the surgeon can qualify himself for their treatment, is by acquiring an accurate knowledge of the mechanism of the parts interested.

We are aware that, in our popular treatises upon fractures, very little regard is paid to this mode of instruction; and if our surprise at this defect in the compilation before us should seem on this account unreasonable, we must urge in our ex-

cuse that it is difficult at once to relinquish the anticipations aroused by the title of the work.

It would carry us far beyond the limits of this review to enter into any discussion of the numerous debateable points that attract our attention in passing over this part of the treatise before us. We shall confine ourselves chiefly to some little notice of the more important omissions which strike us as we advance, in the hope that if the work should go through another edition, some of them may be supplied.

Fractures of the lower jaw. We are sorry to observe that in the treatment of these accidents, the beautiful bandage contrived by Dr John Rhea Barton, is not even noticed.

From having had considerable experience in this accident, we may safely assert that this bandage is much better adapted to all its varieties than any retentive apparatus previously in use. As the original paper of Dr Barton is not in the hands of most of the profession, and as we believe that the bandage is not exhibited in the lectures of either of our surgical professors, we may perhaps render a service to the profession by describing it in this place. Not having the paper of Dr B. at hand, we describe it as we have been in the habit of using it.

Take a roller of two fingers to two and a half in breadth, and the coaptation of the fracture being completed, apply the end of it under the parietal protuberance upon one side of the head; carry it obliquely forward, upward and inward, so as to cross above the junction of the coronal and sagittal sutures; descend along the temple and cheek on the opposite side, pass under the jaw and ascend again along the remaining cheek and temple, and across the first cast of the bandage near the junction of the sutures. Continue the roller so as to pass beneath the parietal protuberance opposite the place of beginning. Cross the mesial line beneath the occipital protuberance, pass beneath the ear, over the front of the chin, beneath the other ear, and, crossing the previous cast beneath the occipital protuberance, proceed to the place of beginning. Repeat this route three times, allowing each cast to overlap its predecessor in two-thirds or more of its breadth, and the bandage will be complete. It forms a triple triangle on each side of the head, and has four crossings, one on each side of the chin, one at the

junction of the coronal and saggital sutures, and one beneath the occipital protuberance. At each of these crossings it should be secured by a pin. On a well formed head this bandage may be applied so firmly as almost to prevent the possibility of moving the jaw.

In some patients, however, we cannot well employ it, because the parietal protuberance scarcely exists; we are then under the necessity of employing the bandage recommended at pages 62, 63.

The bandage of four tails secured to the nightcap should be discarded entirely. If it succeeds at all, it must be in fractures of the ramus, for it is impossible so to apply it as to give firm and steady support to the fragments.

Our objection to the moistened pasteboard has been already expressed in general terms, and we need not repeat it in this place with a more particular reference.

Fractures of the clavicle. Under this head we notice the omission of all distinction in the symptoms of fracture in the different parts of the bone. From the enumeration of the signs given in the work, we should infer that the marked symptoms observable in fracture of the body of the bone were equally observable in all other cases. Now there are two species of fracture of the clavicle mentioned by authors, in which the symptoms differ materially from the description, viz. oblique fracture with the outer fragment riding over the inner*, and fracture between the conoid ligament and the acromial articulation. The omission of the first is not surprising, as it is noticed by but few writers. But the fracture near the humeral extremity occurs more frequently, and has been so constantly described in the lectures of Dr Physick, the highest possible authority, where the treatment of fractures is concerned, that we are disappointed at finding no notice taken of it—particularly as it is often followed by very serious consequences, and, when the coraco-clavicular ligaments preserve their integrity, is detected with extreme difficulty. We should be glad to enter at length into the diagnosis and treat-

* We regret our inability at the moment to refer to our notes. We should have been glad to give a reference to an authority for this curious fracture, which has escaped our memory. We have seen this case but once.

ment of these accidents, but it would lead us into details too prolix and but little suited for this occasion.

We cannot take leave of fractures of the clavicle, without a few remarks upon the apparatus recommended in the treatment.

In the practice of the Pennsylvania Hospital, which is perhaps the highest school of surgery in the country, we believe that the apparatus of Dessault has undergone some slight but at the same time important modifications.* The compresses about the injured bone are omitted, leaving the part open to inspection. The pad is in part supported by a cast of bandage pinned to it at each end, and passing over the sound shoulder; the turns of the first roller which envelope this shoulder being discarded. The second roller, instead of ascending from the axilla on the injured side to the upper part of the shoulder, is made to pass directly across the middle of the arm, and to descend thence to the elbow by successive turns, leaving the superior part of the limb free, in order that no force may be applied to prevent the shoulder from being carried outward.

The principal practical difference between the apparatus of Dessault and Brown is, that the former supports the elbow chiefly by those turns which cross the injured shoulder, while the latter throws the burthen on the sound shoulder. This gives an obvious advantage to Dessault's dressing when the fracture is near the humeral extremity; but in fracture near the sternum, it is certainly an awkward contrivance. Is it lawful to attempt to raise the outer fragment by a bandage resting chiefly upon that fragment?—Surely not! In this case the apparatus of Brown is decidedly preferable.

It seems to be generally admitted, that no apparatus hitherto invented will enable the surgeon to treat a fracture of the clavicle without deformity; and unless the modification of the corset of Chapelle, by Dr Coates, should on farther trial realize the expectations of its author, we may consider a contrivance for the perfectly successful treatment of this accident as a desideratum in surgery. This apparatus has not yet been offered to the public.

* We say this subject to correction—our descriptions are drawn from the practice of that institution some years ago.

Fractures of the os innominatum. Under this head we will merely inquire why the very awkward contrivance of Sir James Earle, and the inconvenient substitute of Boyer, for giving the patient the opportunity of alvine evacuations, are lauded by the compiler, while the vastly preferable machines of Barton, Coates and Wistar (to say nothing of Jenks's alleviator) are passed by in silence. We can hardly suppose that they could have escaped his notice, either in his researches among the journals, or in his clinical observations at the hospital.

Fractures of both bones of the fore arm. The mode of reduction and dressing this class of accidents, is quoted from Gibson and Boyer. It would be scarcely proper in this place to enter into an examination of the merits of the apparatus recommended, as it is almost universally approved by surgeons of the present day: yet we cannot resist the desire to ask, why is a roller applied directly to the limb, in a fracture of the radius, the ulna, or of both combined? The greatest danger to the motions of the limb in such cases, results from the narrowing of the interosseous space, by the approximation of the fragments to the sound bone, or to each other. Now, if a roller is applied immediately to the limb, with any degree of tightness, it must aid in the production of this deformity. If it is not applied so firmly as to do mischief, we cannot comprehend how it can operate at all as a mean of retention.

Fracture of the body of the femur. The description of the apparatus of Dr Physick, which has been termed with sufficient modesty a modification of that of Dessault, is extracted from Dorsey's Surgery; and although the crutch-like extremity of the outer splint is now never seen in practice, and, if we are rightly informed, has been discarded for many years by its justly celebrated inventor,—it still figures in Dr Gross's work. Certainly the idea of employing pressure in the axilla, as a mean of counter-extension, had long been abandoned by American surgeons, until revived by Dr Gibson, in his modification of Hagedorn.

The double inclined plane, as modified by Mr Charles Bell, is mentioned, but without either praise or dispraise. It is hardly seen in this country—and we were somewhat surprised that the modifications of Boyer's splint by Dr Hartshorne,

which are frequently employed, should be entirely omitted, while an apparatus so seldom seen is regularly described. This is the more astonishing, because the work which contains the description of one of those contrivances is quoted by the compiler, under the head of fracture of the femur. We are compelled, therefore, to conclude that they do not meet with the approbation of Dr G. We are far from advocating the general employment of the modifications alluded to, for we disapprove in toto of screws, foot-boards, and socks, in any splint for the fractures before us, nor do we employ the older, and as we think preferable contrivance of Dr Harts-horne, in which these parts are wanting, except in certain cases of compound fracture. Here we should scarcely know how to dispense with it, as it enables us, by removing a portion of one or the other splint, to expose and dress the wound without disturbing the extension and counter-extension.

Whatever may be thought of the merits of these modifications, the very high source from which they emanate, will cause them to be extensively employed for a long time, and they certainly demand some notice from every American author who undertakes to treat practically on fractures of the femur.

We should be glad to enter into an examination of the other apparatus recommended by Dr G. in fractures of the femur; but we have laid ourselves open, perhaps, to some censure already, by undertaking to criticise the approved practice of the day, rather than the labours of the compiler. Be this as it may, it would require a vast deal more space than could be given to any essay in a quarterly journal, to canvass the debatable points in the treatment of this most important class of accidents. We will merely remark, that no bandage is applied immediately to the limb, in the practice of the Pennsylvania Hospital, unless in cases of unusual comminution, swelling, or extravasation.

Fractures of the Tibia. If we understand correctly the description of the dressing for this fracture, it is drawn from the splints employed by Sir A. Cooper. "Two wooden splints, long enough to extend from the knee to some distance below the ankle, and having each a foot-piece, are to be placed on each side of the leg," &c. page 144. These splints are more

difficult to obtain, and much more costly than the fracture box, with which every student in the University of Pennsylvania is or ought to be acquainted. The fracture box is applicable to almost every simple fracture of both bones of the leg, and still more so, to all simple fractures of the tibia, unconnected with the joints, and to all those of the fibula, except that for which Dupuytren has contrived a peculiar apparatus—yet it is nowhere mentioned in the work before us. The substitute of Dr Gibson is indeed recommended, under the head of fractures of both bones of the leg, but is not mentioned where it is most universally applicable—in the treatment of fractures of one bone only.

Fractures of the fibula. The seat and direction of fractures of the fibula are admitted by Dr Gross to be as various as those of any other bone: yet strange to say, he gives us only the treatment recommended by Dupuytren, for those fractures which are seated near the lower end of the bone. Is it meant that the internal splint and the wedge-shaped compress, intended by the author to reduce the consecutive dislocation attendant upon this accident, are likewise to be employed in fracture near or above the middle of the bone, in which no such dislocation takes place? If so, we feel assured that the practice will be followed but seldom. It cannot be denied, that such fractures would be managed by this plan of treatment with tolerable success, and a like success would probably attend upon the plan of allowing the limb to repose upon a pillow, without any splint or bandage; a little shortening, and some lateral displacement might indeed occur, although we should have doubted the possibility of the former, had we not seen it proved by post-mortem examination; but this deformity is not attended by any material injury to the limb, and we do not think that either of these methods will be attended with so little inconvenience to the patient, as would result from placing the limb in a common fracture box. We agree with Dr G. in thinking the apparatus of Sir A. Cooper more objectionable than that of Dupuytren, at least in fractures within three inches of the malleolus, and we are therefore still more at a loss to account for his recommending the former, in fractures of the tibia.

Fractures of both bones of the leg. It now only remains for

us to notice the recommendation of Hutchinson's splints, in cases of oblique fractures of this class, when attended by shortening of the limb. We are aware that these splints were highly recommended some years ago by the present professor of surgery in our school. Whether this continues to be the case we do not know; but they have long since been abandoned in the practice of the institution where they originated, in consequence of the serious difficulties occasioned by the interruption of the circulation produced by the pressure of the bandage, which secures the counter-extending tapes below the knee. Indeed, if the traditions of the institution are correct, they were in the end discarded by their talented but unfortunate author.

The cases of fracture of both bones of the leg requiring extension and counter-extension are rare, and when they do occur, we cannot hesitate in giving a decided preference to the use of Physick's modification of Dessault's splints, or Hartshorne's original modification of Boyer's over every other apparatus designed for the purpose.

The third chapter of the work treats of the diseases of the bones. It comprises sixty-three pages, and gives a general view of most of the diseases of the osseous tissue, with some observations on periostitis.

On this chapter we have scarcely a remark to offer. There is so little known, so little science in this department of surgery, that it is almost painful to dwell upon it. When the day arrives in which surgeons shall investigate the diseases of the various simple tissues which enter into the structure of bone; when the rude mechanical terminology still employed in this branch of their studies is forgotten; when the same acumen and untiring diligence which have recently thrown light upon the affections of almost every other organ are directed upon the morbid anatomy of bone; then, nor till then, can we cease to regard the diseases of the bones as the opprobria chirurgicorum.

In the first section of this chapter, which treats of caries, Dr Gross gives us an account of various operations for the excision of the extremities of the bones when carious. Much of this will be new and useful to those who have not the opportunity of referring to large libraries.

The references given at the close of each section of this chapter, will enable the inquisitive student to trace out most that is now known upon the subject, and to commence a career of inquiry that can scarcely fail, if steadily pursued, to produce something valuable to mankind and creditable to himself.

The second part contains a short chapter of nine pages upon the general anatomy of the joints; a second, sufficiently ample, upon the injuries, and a third upon the diseases of the joints. The second chapter is devoted almost entirely to dislocations, those of each joint being preceded by a concise description of the structure of the joint and of its ligaments. This is perhaps the best written part of the work, and we have but few remarks to make upon it.

Dislocation of the humerus downwards. We cannot pass over this subject without one practical observation on the proper position of the foot, in reducing this dislocation by placing the foot in the axilla. It is recommended by most surgeons to apply the heel directly against the head of the bone—probably under the impression that the lateral pressure produced by it would force the head of the bone toward the glenoid cavity: but if any one will duly consider the position of the parts, he will perceive that the pressure so directed tends in some degree to oppose the extension of the limb, and thus renders additional force necessary to restore the head of the bone to its proper place. We have always been in the habit of placing the patient on a mattress laid upon the floor, and allowing the limb to be carried out from the side, until it assumed the position most comfortable to the patient. We then placed the leg parallel with the arm of the patient, with the foot abducted as much as possible, and applied upon the side of the patient just below the head of the humerus, but in such a manner as to make as little pressure as possible upon it, the heel being placed considerably behind it. In this way we have reduced a dislocation with great ease, several days after its occurrence, in a very muscular man, and after it had resisted several very forcible attempts with the heel in the usual situation.

Dislocation of the fibulo-tibial articulation. The author remarks that he knows of no well authenticated case in which the inferior fibulo-tibial articulation was dislocated. We re-

member to have seen a case in which a fall upon the feet forced the astragalus against its socket in such a manner as to drive asunder the two malleoli. When the foot was pressed upwards the malleoli separated, but when it was drawn downward they resumed the proper relations. If we recollect right, the case was successfully treated by making lateral pressure upon the malleoli, the limb being placed in a fracture box. The patient was admitted into the Pennsylvania Hospital two or three years ago.

Of sprains. "The chief indications in the treatment of these injuries are, first, to arrest the hemorrhage from the lacerated vessels; secondly, to prevent the occurrence of severe inflammation; thirdly, to promote the absorption of the effused matter; and fourthly and lastly, to restore the motions of the injured parts," p. 339.

To fulfil these indications the treatment recommended is the application of twenty or thirty leeches over the seat of the injury; the relaxation of the muscles of the joint, and the elevation of the limb; in order to promote the flow of blood after leeching, immersion in warm water, or a warm solution of opium and acetate of lead. Nothing is said of the application of cold water, at once the most popular and most powerful remedy in the treatment of such injuries. We cannot see the propriety of applying leeches until inflammation supervenes; and the application of warmth and moisture conjoined, in the first moments of a sprain, is calculated to increase the extravasation and the determination of blood to the part. Immediate immersion in cold water, or what is still better, cold affusion, continued until numbness of the part is produced, followed by the application of a rag wet with cold laudanum or watery solution of opium, should, we think, precede the adoption of the treatment recommended by Dr Gross, which becomes very proper on the commencement of reaction in the part.

We shall offer no farther remarks upon the work before us, except to express that, with the exception of some inaccuracies of style, which now and then obscure the meaning of a sentence, it is highly creditable to the author, and contains as clear and concise an outline of the subjects treated of as could be demanded from one who compiles from the writings of others, avowedly without the aid of extensive practical experience.

The references display considerable research, and will be found useful to those who wish to investigate these subjects more fully.

We take leave of our author with the remark that praise unjustly bestowed is an injury to the deserving. He has been somewhat indiscriminate in his panegyrics upon some European surgeons, and we might say, with almost the same degree of justice, that he had neglected some of our own.

It is malapropos to "tease mild Baily and soft Abernethy" with compliments on the *suaviter in modo* which belong to the *fortiter in re*. In this respect we think Dr G. has sometimes done those things which he ought not to have done, and left undone those things which he ought to have done.

ART. V.—EBERLE'S PRACTICE OF MEDICINE.

A Treatise on the Practice of Medicine. In two volumes. By JOHN EBERLE, M.D. Professor of Materia Medica and Obstetrics in Jefferson Medical College, Member of the American Philosophical Society, &c. &c. 8vo, pp. 1078. John Grigg. Philadelphia.

To do justice to a work like the present in a concise review is scarcely possible. Even in restricting ourselves to an examination of the more important of the subjects upon which it treats, so many points worthy of comment present themselves, that, were we to enter fully into their consideration, our remarks would require more space than that afforded by an entire number of this Journal. And yet it is precisely one of those productions, a rigid examination of which is most demanded. Works of this class constitute an indispensable item in the libraries of a large portion of the profession, especially in the country; and from the frequency with which they are resorted to as books of reference, they cannot fail to exert a very pow-

erful influence over medical opinions and practice. It is important, therefore, that the systematic treatises placed in the hands of the profession should be such only as inculcate accurate views of the nature of disease, and the most approved plans for its treatment.

The work of Dr Eberle is confessedly one of very great merit. It does much credit to his industry and learning, while it places in a very favorable point of view his abilities as a practitioner. In addition to the results of his own experience, and whatever of importance was to be culled from the older writers, he has, in the majority of instances, availed himself fully of the facts and improvements for which our science is indebted to the investigations of contemporary physicians. He has not, it is true, always allowed to the latter the importance we conceive they merit, nor admitted to a sufficient extent the conclusions which legitimately result from them. From his views of the nature of disease we shall be obliged, indeed, very frequently and very widely to dissent; from his therapeutic directions less often. Upon the latter it is evident that the doctrines of physiological medicine have had a much more decided and beneficial influence than upon the former.

The author disavows any attempt at a formal classification of his subjects, but states his intention, should another edition be called for, to adopt, in that, an arrangement founded on the particular structure implicated in each disease. He conceives, however, that the order in which the different subjects now succeed each other, to be probably as natural as that pursued in similar works. Even admitting this to be true, the arrangement is extremely defective: by widely separating diseased conditions of the same organs, closely related to each other, and bringing into connexion others which have but little affinity, it cannot fail to confuse the reader, even if it does not lead him into error.

To fevers, with the consideration of which the first volume commences, succeed the more prominent of the phlegmasiæ, in the midst of which we have consumption. These are followed by the exanthemata, under which head is included inflammation of the skin, or erysipelas, and the volume concludes with an account of hemorrhages. The second volume com-

mences with the chronic nervous affections, at the end of which are arranged asthma, whooping cough, asphyxia and angina pectoris. The next chapter is devoted to the diseases of the heart. To these succeed the neuralgia; next follow indigestion and jaundice; then those diseases of the intestines not previously treated of, as diarrhœa, cholera, colic and worms; hæmorrhoids follow next, then diseases of the urinary organs, followed by dropsy, scrofula and scurvy. To these succeed gonorrhœa, syphilis, derangements of the menstrual flux, leucorrhœa, chlorosis and phlegmasia-dolens. Without any additional labour on the part of the author, an arrangement far more systematic and convenient than this might certainly have been effected.

Although the present treatise presents a tolerably full view of the various morbid affections of the system, yet we notice a few very important omissions. Thus it contains no account of carditis, either among the inflammations or in the chapter devoted to the diseases of the heart. Neither is inflammation of the uterus, or metritis, described, although a disease of by no means unfrequent occurrence, and often very obscure in its symptoms. Notwithstanding also the discussions to which the pathology of puerperal fever has given rise, we are presented with no formal account of this disease, nor is its identity with peritoneal inflammation distinctly stated under the latter head; indeed, no notice whatever is taken of the frequent occurrence of peritonitis soon after parturition. Among the dropsies is not included that of the ovaries, though according to our experience the most common form under which abdominal dropsy presents itself in females. Nor do we meet with any account of that peculiar affection of the mouths of children, terminating quickly in gangrene of the gums or of the cheek. This is the more to be regretted, as it is a disease of frequent occurrence, and very readily cured by an appropriate treatment, but often fatal when mismanaged or neglected. It has of late attracted the attention of several of the German writers. With the recent treatise of Richter, *Der Wasserkrebs Der Kinder*, our author is no doubt familiar.

In investigating the nature of diseases Dr Eberle professes to have followed no general doctrine or system of pathology, and this, in our opinion, constitutes the prominent defect in

the work before us. Without clear and distinct views of the principles of general pathology, it is impossible to combine together the mass of facts we possess in relation to the morbid conditions of the human system, so as to found upon them an accurate diagnosis, or a successful mode of treatment. Without a strict analysis of the phenomena of disease, and some decided opinion as to the condition of the individual organs or tissues upon which these ordinarily depend, our pathological views will be marked by the utmost uncertainty and confusion.

To attempt to borrow from the doctrines of Brown, Cullen, Darwin and Broussais, without the materials thus obtained being reduced to a harmonious system; in other words, without a *general system* of pathology is formed from them, will be very apt, in relation to different diseases, or even the different forms of the same disease, to lead to the adoption of principles of explanation in direct opposition to each other, while it cannot fail to introduce the utmost confusion into medical language. In more than one instance these results of hasty eclecticism appear in the work before us.

Thus, scarcely any thing can be more vague and unsatisfactory than the author's use of the term irritation. This denotes in one case abnormal or morbid excitement; in another the condition of the organ upon which this excitement depends, and in a third, the remote cause by which the morbid excitement is produced: again, it expresses mere functional derangement without organic disease; then a morbid state of an organ closely allied to inflammation, into which it frequently passes; in other places, it is spoken of as something distinct from inflammation, but capable of existing jointly with the latter in the same organ, while in the chapter on jaundice the author would appear to understand by it sub-acute inflammation.

The same degree of vagueness is exhibited in his use of the term fever. In some instances it is very properly restricted to the phenomena immediately dependent upon the morbidly increased action of the heart and arteries, while in others it is evidently extended to all the phenomena of disease by which those of a strictly febrile character are ordinarily accompanied. Notwithstanding, also, Dr Eberle defines fever to be "an irritated excitement of the sanguiferous system," a "general irritated vascular action," yet when he treats of the pathology

of mental derangement, he entirely overlooks this definition, and applies the term fever to the morbid condition of the brain upon which insanity depends.

"Insanity consists essentially in a *local fever of the brain*, that is, in a morbid condition of this organ, in which both its medullary and vascular structures are in a state of diseased action."

In truth, the technical language of our author is throughout more deficient in philosophical precision than we should have expected from our previous knowledge of his learning and general talents. With this exception, however, his style is correct and well adapted to a purely didactic treatise.

The work, as we have already remarked, commences with the subject of fever, to the consideration of which the first ten chapters of the first volume are devoted. The initial chapter is divided into two sections, the first of these treats "of the general *pathology* of fever," the second, "of the *etiology* of fever," and the succeeding chapter "of the *causes* of fever;" while the third and fourth chapters treat of miasmata and contagion. In this arrangement there is a degree of awkwardness and an appearance of inaccuracy which it would have been better to have avoided. If the term pathology be restricted to an investigation of the morbid condition of the organs, the term etiology should certainly include all that relates to the remote and exciting causes of disease, among which are of course to be included miasms and contagion.

"The positions which appear" to Dr Eberle, "to be susceptible of firm support, in relation to the general character and etiology (pathology?) of fever, are embraced in the following propositions:

"I. Fever consists in an irritated excitement of the sanguiferous system, and is essentially connected with a deranged state of the vital properties of this system.

"II. This irritated excitement may be the result of irritating causes acting immediately on the internal surface of the sanguiferous system, or of irritating impressions conveyed sympathetically to this system from a primary focus of irritation."

By the novel and scarcely legitimate term "irritated excitement," the author intends to express, not simply a greater degree of the natural or healthy action, but an action or ex-

citement "which is essentially morbid or distinct in quality from healthy action."

"Mere increased excitement," he observes, "is the result of stimuli acting either directly or indirectly on an organ or system whose vital properties are in a healthy or underanged (?) condition. Thus a few ounces of alcohol will cause a high degree of arterial action in an individual not accustomed to this stimulus. The same effect will be produced by any sudden and violent bodily exertions, as running or rapid walking. Here, then, there will be *increased* action of the heart and arteries, and an augmented state of the animal temperature; but fever, notwithstanding, will not be present, because the vital properties remain in a natural condition, in consequence of which the organs thus inordinately excited will return to their regular grade of healthy action as soon as the exciting cause has expended its force. As, however, all excessive action tends to weaken, and finally to derange the vital properties of the over excited part, so, when these stimuli are very protracted in their influence, they at last derange these properties, and fever is the immediate result. Fever is, therefore, essentially connected with an altered or morbid condition of the organic sensibility and irritability of the heart, arteries and capillary system; for, without such a condition, all irritants or stimuli can produce only increased, but not morbid action in the capillary and general sanguiferous system. So long as the vital properties retain their healthy condition, every excitation can only produce a greater degree of normal action—the various secretions can only be augmented, but not deprived, or morbidly diminished. So soon, however, as these properties have undergone a change from their natural state, every stimulus, whether natural or morbid, must necessarily excite a morbid action. Hence, it may be concluded, that every cause which produces fever, in whatever way its influence may be conveyed to the heart and arteries, must necessarily derange their vital properties, either directly or indirectly, before that general irritated vascular action which constitutes fever can be established."

If, in the foregoing extract, the author intends simply to prove that the general febrile symptoms, in other words those phenomena to which the term fever is strictly applicable, depend essentially upon an irritation or morbid excitement of the heart, we believe that most modern pathologists will be found to agree with him; but if we are to understand from it, that all the phenomena usually included under the appellation fever, are produced by a morbid action of the general circu-

lation, this is in direct opposition to some of the best established facts in physiology and pathology. The heart and arteries would indeed, as Dr Eberle has himself very properly observed, "appear to be the last organs which are brought into morbid action in the development of fever."

From the language employed we are inclined to believe, that by "an irritated excitement of the sanguiferous system," is meant to be expressed a diseased condition of the whole of this system, including heart, arteries, and capillaries. If this be the case, we deny the correctness of the statement. A universal irritation of the blood-vessels, throughout every organ and tissue of the body, is a condition of things which we believe never did nor never can exist; that it does not in any case of fever, must be evident upon even the slightest analysis of the symptoms.

If we understand our author correctly, the first effect which results from the application of an undue stimulus or irritating cause to any part of the system, is an increase of excitement. Subsequently, however, if the influence of the irritant be prolonged, the vital properties of the part become deranged, and an irritation is set up, which, by a continuance or augmentation of the stimulus, may pass into inflammation. This differs but little, save in terms, from our own views, and coincides very nearly with the doctrines of the physiological school. We feel persuaded that had the author studied the latter more closely, he would have been enabled to express his own sentiments with much more clearness than he has done.

In reference to the remote irritations that induce fever by their sympathetic influence upon the heart and arteries, Dr E. lays down the following propositions:

"IV. Those general causes of fever which do not act directly upon the sanguiferous system through the medium of the blood, produce fever by causing some important functional derangement or organic irritation, which successively draws other organs within the sphere of morbid irritation, until the heart and arteries are thrown into a state of irritated excitement. Inflammation is rarely the primary consequence of their influence.

"V. Although the fevers which are the result of a series of sympathetic actions do not often depend on a primary local inflammation, but rather on some important functional lesion

(the immediate result of the remote cause), yet inflammation is very apt to supervene in the structures or organs thus primarily deranged, when the general momentum of the circulation is augmented in the development of fever."

That, in fever, the primary lesion is very frequently, if not generally, confined to a state of irritation not amounting to inflammation, we very readily admit. This irritation may, in many cases, be sufficient, particularly in very excitable subjects, to affect sympathetically the stomach, brain, or heart, without giving rise to other local symptoms beyond slight functional derangement of the organ in which it is seated. This primary irritation may, subsequently, and does very generally, pass into a state of inflammation: if, however, the sympathetic irritation which it gives rise to in another organ be very intense, or amounts to acute inflammation, it may itself entirely disappear, and on examination after death, be found to have left no traces of its existence in the part at which it occurred. But the terms "functional derangement" and "functional lesion," so frequently employed by our author, and upon which he places so much emphasis as indicative of the condition of the organs primarily affected in those cases of fever not depending upon direct irritation of the heart, are altogether incorrect. We know nothing of function independent of an organ, nor can we conceive of any lesion of the functions separate from a lesion of the organs upon which the functions depend.

Dr Eberle does not hesitate to admit that fever "is always *ab initio* essentially attended with local irritation, passing sometimes into actual inflammation."

"That fever," he also remarks, "is a very common result of local inflammation, is unquestionable. So intimately are all the various parts of the animal body connected with each other by the ties of sympathy, that no structure or organ can be strongly irritated without causing a sympathetic irritation in other organs or structures. If the primary irritation involve the sanguiferous capillaries, the irritation will be communicated by sympathy to the general vascular system, and fever will be the result; but if the local irritation be purely nervous, it is diffused, and as it were locked up in the general nervous system, and the result will be convulsions, or some other form of general nervous affection. Without doubt, too, inflammation of the mucous membrane of the alimentary canal is much

more common in febrile diseases than was formerly, and by many is still supposed. It is even probable that in many instances of fever, such inflammation exists as the *primary* and *essential* cause of the febrile phenomena. This may be especially the case in those instances of fever which result from the combined agencies of impure and indigestible diet and atmospheric vicissitudes. But although we may admit the correctness of these observations, yet to refer all fevers, remittent, intermittent, and continued to a *gastro-enteritis*, as is done by Broussais and his followers, is as remote from truth as it is detrimental in its influence on practice."

We fully agree with our author in his rejection of the proposition that every fever is a gastro-enteritis. The doctrine so much insisted upon by Broussais, that "in every case in which an organ is irritated to an extent sufficient to excite fever, the latter is invariably induced by the conjoint irritation of the heart, and the mucous membranes, especially that of the stomach*," appears to us to be contradicted by innumerable facts. It has certainly not been verified by the result of our own observations. We believe that the irritation of almost any organ, when of a sufficient grade to affect sympathetically the heart, will give rise to fever, without necessarily inducing irritation of the gastro-intestinal mucous membrane, which, in the primary stages, at least, of many fevers may remain unaffected. Nevertheless, the close sympathetic connexion which exists between the stomach and the other parts of the system;—the rapidity with which, in consequence, irritations occurring in either of the principal organs are repeated in it, warrant our considering the stomach to a certain extent as the centre and diffuser of sympathetic impressions. Hence, few cases of fever, of any violence, can occur without the stomach being sooner or later brought into a state of irritation or of inflammation, while in the majority of cases it will be found to be the organ primarily affected. To use the words of Dr E. (page 11, vol. I.) "unquestionably intestinal irritation and inflammation perform an important part in febrile affections."

To the argument in proof of this position, to the extent contended for, drawn from the very general existence of marks of inflammation in the mucous membrane of the stomach and

* Journal Univers. des Sciences Medical. Tome VIII. p. 143.

intestines of those who die of fever, Dr E. replies, 1st, That these marks of inflammation are not so generally met with as has been maintained. 2dly, That when they do occur, they frequently supervene in the course of the disease, and are a consequence of the fever; and 3dly, That they are often produced by the disuse of purgatives by the advocates of the physiological school in the treatment of fever.

We have already admitted that fever is not necessarily connected with gastro-enteric inflammation, and that in many cases this inflammation occurs in the course of the fever; not, however, as a consequence of this latter, but rather of the primary irritation upon which the fever itself depends. It is therefore unnecessary to discuss the two first of these objections. The third objection, of which Dr E. makes great use, is thus expressed in his own words.

"The Broussain mode of treating fevers, although especially meant to obviate such inflammations, (those of the gastro-intestinal mucous membrane) appears to me, in one respect, well calculated to favour their occurrence. The almost total proscription of purgatives from the list of our remediate means for the treatment of fever, so far from lessening the tendency to gastro-enteritis, tends, I conceive, in general, to an opposite result. In a recent work by Bouillaud, there are upwards of sixty cases of fever reported, in not a single instance of which was there a purgative medicine exhibited by the mouth. In all of these cases, however, marks of inflammation, and in the majority, ulcerations were detected in some portion of the mucous membrane of the bowels. That this should have been observed, will not appear strange, when it is considered that in all these cases, most of which continued from three to four weeks, all the *acid* and vitiated contents of the intestines were suffered to remain undisturbed, to act on their delicate lining membrane."

If it were true, that indications of pre-existing inflammation are to be met with only in the bodies of those who die of fevers that have been treated without purging, the foregoing remarks would then have some weight. But the fact is not so. Redness, thickening and softening or ulceration of this membrane occur in the majority of those who fall victims to fever;—certainly as often in cases in which purgatives have, as in those in which they have not been employed. These very appearances are described by Roederer and Wagler, by Hildenbrand and

others by whom purgatives were certainly not banished from the list of remedial agents in fever. To say nothing of the other indications of fever, ulcerations were discovered in ninety-two of the cases related by Andral*, by whom purgatives were employed, and they are noted as having been very commonly observed in the cases referred to by Dr Tweedie in his clinical illustrations†; notwithstanding the latter gentleman, as he assures us, was very careful to keep up a *gentle* action of the bowels by purgatives throughout the disease. But Dr Eberle informs us that intestinal irritation and inflammation may, no doubt, frequently be produced "in consequence of harsh and repeated purgation, and the use of other irritating remediate agents." The line which separates the extent of purging necessary to prevent the occurrence of gastro-enteritis in fever, from that which gives rise to it, ought certainly to be strongly marked and well guarded; a slight transgression on either side, if the author's opinions are correct, must be productive of serious consequences.

"In all febrile affections, the secretions, which are poured into the intestinal tube, are" it is said, "unnatural and vitiated." That in a certain sense they do invariably become vitiated in the course of the fever, is certainly true. We suspect, however, the author goes too far, when, from the fact of their vitiation, he infers that they are invariably acrimonious. But be this as it may—what, we ask, has caused their vitiation? Let the author himself reply. "I think" he observes, (vol. 2. page 266) "it may be assumed as a pathological axiom, that the function of secretion can never be deranged, (and in no other way can the fluids of secretion be vitiated,) without the existence of *irritation* in the secreting organ." Now the greater amount of the secretions poured into the intestines is furnished by the capillaries of the mucous membrane; hence, from the author's own showing, the intestinal mucous membrane in all febrile affections is in a state of irritation, and when such irritation exists, Dr E. admits (vol. 1, page 11) that "the soothing treatment recommended by Broussais, would, no doubt, be much more salutary than the vigorous purgative plan, so commonly pursued in this country and in

* Clinique Medicale. † For a review of this work see our 19th No.

England," with the view of ridding the intestines from their vitiated secretions.

On the subject of purging in fever, with the view of ridding the intestines from their vitiated secretions, a sentence is made use of by the author, in his first volume, page 94, which so fully expresses our own sentiments and experience, and from which a practical lesson of so much importance may be drawn, that, notwithstanding its length, we cannot refrain from extracting it. Extending, however, what the writer applies to bilious remittent fever, to fevers in general.

"There is one fault which a physician sometimes commits in the treatment of fevers, and that, too, for the most part, when he thinks he is doing right:—I allude to the long continuance of purgative medicines. He is apt to think that the impurities have been long fixed in the bowels, and in order to cleanse his patient thoroughly, and to leave nothing noxious behind, he persists in the use of purgatives. What is worse, every appearance of these cases would seem to justify his suspicion of the existence of fixed impurities of long standing in the bowels, and confirm him in his design of at once and for all making a clean house. *The longer he continues to give his purgatives, the fouler does the tongue become, and the more distressed the stomach; the symptoms, in short, of intestinal impurities become more and more conspicuous, whilst he continues to dilute and to evacuate, without reflecting or knowing that he is himself the cause of all the noxious matter in the intestines, by constantly irritating them with his purgatives, and keeping up an afflux of fluids to the internal or villous coat.* The most healthy individual will get a foul tongue and lose his appetite if he take neutral purgative salts for several days in succession."

As a further offset to the evidence adduced from post-mortem examinations, in proof of the gastro-enteric doctrine of fever, it must be observed, says Dr Eberle, that

"So far as the mere redness or injected state of the mucous membrane is concerned, we can draw no certain inference as to the previous existence of inflammation in this structure. That these phenomena are frequently the result of changes effected in *articulo-mortis*, or *post mortem*, is fully demonstrated by the observations of Mr Yellowly and of Mr Seeds."

It is to be recollected, however, that "mere" redness, or mere injection of the vessels of the mucous membrane is not supposed by the advocates of the physiological school to afford unequivocal evidence of preceding inflammation. They have, on the contrary, attempted to point out the mode

in which the appearances actually produced by inflammation in the mucous membrane may be distinguished from those which have a different origin; and if any dependence is to be placed upon the observations of Billard and others, and the experiments of Dr Horner, and of Cassimir Broussais, the distinctive characteristics of the former are so well marked, that he must be considered a very careless observer by whom, on this point, any important mistake is committed. Dr Eberle does not, himself, appear to think the mistake can frequently occur, when he remarks,

“It cannot, indeed, be presumed, that the injected state of the mucous membrane of the intestinal tube, so often discovered in those who die from fevers, is always, or even generally, to be ascribed to a mere post mortem change; but that such changes do sometimes, nay often, occur, and that they have been assumed as evidences of previous inflammation, there can exist but little doubt.”

The course and phenomena of intermittent fevers present us, according to our author, with insurmountable objections to the physiological doctrine. We do not think, however, that he has succeeded in establishing the position here assumed. “Inflammation” he remarks, borrowing the language of Armstrong, “cannot exist in the cold stage of fevers, all the phenomena of which are opposed to inflammation.” But we are to recollect that all the phenomena of the cold stage, “the weak contracted pulse, the general languor and lassitude, the diminished temperature, and the sense of chilliness,” usher in almost every fever, and yet, according to Dr E. “fever is a very common result of local inflammation.” The most decided inflammations, those of the lungs, stomach, kidneys, peritoneum, &c. often commence with a chill equal in intensity to that which ordinarily occurs in intermittent fever. In peritonitis, especially, the cold stage is seldom absent, and, as remarked by A. C. Baudelocque, extends in some cases to every part of the body, and is attended with violent and long continued rigours*. We perceive, therefore, that the mere existence of the cold stage forms no argument whatever in proof of the non-dependence of intermittent fever upon a local irritation, or even actual inflammation.

* *Traité de la Péritonite Puerpérale*; reviewed in the 20th number of this Journal.

But the principal objection to the doctrine which refers intermittent fevers to gastro-enteric irritation, Dr E. conceives to be their periodicity, according to his views:—

“An inflammation which observes a perfect periodicity in its attacks, must be *sui generis*. If intermitting fever depend on inflammation of the mucous membrane of the alimentary canal, then must this inflammation be periodical, and, therefore, essentially distinct from the inflammation which produces *remitting* fever; for in this malady it must be continuous. These two forms of fever are, however, produced by the same remote cause; and we are therefore forced to admit, by the assumption of this doctrine, that the same remote cause is capable of producing two kinds of inflammation, essentially distinct from each other.”

The author admits that some affections “of an inflammatory character, have been known to recur in a strictly periodical manner,” but declares, that “such cases must be viewed as anomalies, and altogether contrary to the almost universal course and character of phlegmasial diseases.” But, we ask, is this really the case? Are intermittent-phlegmasiæ of such rare occurrence? We believe, on the contrary, we are borne out by facts, in the assertion that inflammations marked by perfect intermissions of a shorter or longer duration, are very frequently met with. In the books, it is true, they have very generally been described as masked intermittents—intermittents confined to a single organ. Tommasini is almost the only modern pathologist who has denied the existence of these inflammations; considering them invariably as forms of intermittent fever.

But we are not contending for the existence of acute gastritis as the cause of intermittents. We believe them very generally to depend upon a simple intermittent irritation, either of the stomach or of some one of the other organs. We have known all the phenomena which constitute these fevers to be produced by the irritation of worms, or of indigestible substances in the stomach, and to cease almost immediately upon their expulsion. Dr E. has seen one case, where, in a delicate child, “a distinctly formed ague was manifestly produced by intestinal irritation, from too free an indulgence in irritating articles of food.” In these and similar cases, the primary irritation would appear to be permanent, the periodi-

city being confined to the sympathetic irritation of the heart. Chronic peritonitis is often attended with a distinctly marked intermittent fever; the phenomena of the latter may also result from the chronic effects of arsenic introduced into the stomach.

Dr Eberle declares that inflammation of an intermittent type must be *sui generis*,—essentially distinct from that which is continued, and incapable of being produced by the same remote causes. This, however, we deny. We can see no reason whatever, from the mere circumstance of an inflammation being intermittent or continued, to infer any essential difference in its nature. But if the opinion of Dr Eberle be correct, and the fact of their continuance or intermission is sufficient to constitute an essential difference between inflammations, must not the same be true also of irritations? Now Dr E. contends, that all fevers consist in an irritation of the sanguiferous system; is then the irritation which gives rise to intermittents *sui generis*, differing essentially from that which produces remittent or continued fever? If the reply be in the affirmative, the opinions of our author in regard to fever are liable to the same objection he adduces against those of Broussais; for he ascribes to the one remote cause, marsh miasmata, both intermittents and remittents. But not only does Dr E. refer the irritation of the sanguiferous system, which occurs in intermittents and remittents, to miasmata; but to the same cause he refers also the acute continued inflammation of the intestines, upon which dysentery depends.

“Of a number of individuals exposed for a certain time to the same *miasm*, some may become affected with intermitting fever, others with mild remittent fever, some with malignant bilious fever, some with bilious colic, some with dysentery, &c.”

The fact is, too much importance has been ascribed in investigating the pathology of fever to the mere circumstance of their symptoms being continued or periodic. In this respect we may say with Rubini, “La considerazione del tipo, e della periodicità non presenterebbe che oscurissime discussioni ed inutili*.”

* For further observations on the subject the reader is referred to our review of the work of Mongellaz, Vol. I. page 323; and of Dr Dewees, Vol. X. page 85.

An objection is adduced by our author to the supposition of intermitteat fever being dependent upon local inflammation, especially of the stomach and intestines, from the character of the remedies most effectual in its cure.

"Who can believe," he asks, "that quinine, arsenic, black pepper, and other remedies of a similar character are peculiarly calculated to cure inflammation of the mucous membrane of the alimentary canal"—"and yet all experience goes to prove that they are decidedly the most prompt and valuable means for the cure of intermitting fever."

All reasoning as to the seat and character of a disease drawn from the nature of the remedies employed in its cure, must be received with a good deal of caution. We know little of the manner in which many of our remedial agents act upon the system, while not unfrequently we are led into error from the fact that certain morbid phenomena will disappear under a particular course of treatment, not, however, in consequence of the latter having restored the diseased organs to a state of health, but merely from its having changed their pathological condition.

But admitting that "quinine, arsenic and black pepper," are the remedies best adapted to "the cure" of intermitting fever;—we cannot perceive how this disproves its connexion with a local intermittent irritation, or inflammation, of the stomach. At what period of the disease does their administration most certainly effect a cure? Is it not during the intervals, or in other words, in the absence of the fever? And do they not always act with the greatest certainty, according as the intermissions have been rendered the most complete, previously to their being resorted to? The experience of Dr Eberle, in common with that of every other observing physician, proves the affirmative. It is not, therefore, to cure the local irritation, or inflammation, upon which intermitting fever depends, that we resort to what are generally termed tonics; but in the intervals of this irritation to produce an impression upon the organ in which the irritation is seated, calculated to prevent its return. During the existence of the irritation these remedies are calculated rather to do harm than good; and we assert, confidently, that in the hands of the practitioner, who by the judicious use of bleeding, leeches or cups, ensures a complete solution of the local irritation, be-

fore resorting in intermittent fever, to the bark or quinia, these will be found very generally and promptly to effect a permanent cure. He will, it is very certain, meet with few of those speedy relapses or complete failures so much complained of, under the ordinary routine practice pursued in this disease.

Our space will permit us only to glance at the opinions advanced by Dr E. in relation to the remote causes of fever and their mode of operation. The former he arranges under the following heads.

"I. Recrementitious substances, which in health are separated and thrown out of the system, but being retained in the circulation, or reabsorbed, become a source of irritation to the sanguiferous system, and, therefore, of irritative fever. These morbid causes are always *secondary*, being themselves the consequences of an anterior injurious cause or impression. Thus, the retention of perspirable matter can occur only in consequence of the influence of some previous cause, adequate to disturb or arrest the action of the cutaneous exhalents. The recrementitious fluids which appear to be most injurious to the animal economy when retained in the circulation, even in their elementary forms, are the perspirable matter, the bile, and the urine; and of these, the first is perhaps the most frequently concerned in the production of fever. The influence of causes of this kind in the development of fever, is probably much more extensive than is generally admitted in etiological inquiries. In all that extensive class of febrile affections which arise from the influence of cold, retained perspirable matter performs, probably, a principal part in their development.

"II. Irritating substances generated within the body, but wholly independent of any organic actions. These causes of disease are usually generated in the *primæ viæ*, and consist of worms, acids, mucous, and various other irritating substances, resulting from the fermentative or putrefactive processes.

"III. Morbific agents, generated out of the animal body, consisting either of deleterious substances floating in the air, or of the sensible properties of the atmosphere, or, finally, mechanical causes—namely, miasmata, noxious gases, heat, cold, electricity, humidity, and mechanical injuries.

"IV. The fourth and last class of morbid agents comprehends those causes which are generated by a morbid organic action of the living system, constituting the various contagions."

Of these causes some are presumed to act in the production of fever, by a primary morbid impression on the nerves of the stomach, skin, or some other part of the body, while others are taken into the circulation by absorption, and act immediately upon the internal surface of the heart or blood-vessels.

The primary impression of the first set of causes being conveyed to the sensorium commune, is thence reflected throughout the whole nervous system.

"As the different organs of the body are, however," remarks Dr E. "endowed each with its own or peculiar modification of sensibility, there must be some that are insusceptible, whilst others are peculiarly susceptible of receiving and responding to the reflected morbid impression; and these latter, it is reasonable to presume, will be irritated and functionally deranged." From the organs or organ thus primarily irritated, the morbid excitement passes from organ to organ, or tissue to tissue, according to their various degrees of sympathy with the part primarily affected and with each other, until the whole system is involved in morbid excitement."

Foreign substances may undoubtedly enter the blood through the medium of the absorbents, and in this manner may act immediately upon the heart; or, as more commonly happens, their effects may be directed to some one of the other organs. Upon the truth of this depends the whole system of endermic medication*. But that fever is very commonly produced by morbid causes, thus introduced into the system, is a proposition by no means so well established. Especially must we

* In attempting to prove the action upon particular organs of foreign substances introduced into the blood, from the fact that certain articles of the *materia medica* applied upon the skin, or introduced into the veins, will produce their specific effects, Dr Eberle remarks, "Thus, if tartar emetic be kept in contact with the external region of the stomach, the impression which it causes will be conveyed to the brain, which in its turn will reflect the impression throughout the whole nervous system; but as the stomach alone is endowed with a mode of feeling capable of receiving this peculiar impression, it will be in this organ that its effects will be conspicuous." If it be meant that tartar emetic applied as here described will produce nausea or emesis, the author has been led into a mistake; neither tartar emetic nor other articles, generally speaking, which, like it, produce a violent irritation of the skin, will, when applied to the latter, exhibit those effects which result from their introduction into the stomach. We admit, however, the general proposition that morbid impressions made upon the skin will be reflected upon internal organs.

dissent from the author's opinion that cold acts in the production of fever by suppressing the function of the skin, and thus causing the matter of perspiration to be retained in the blood, and become a source of irritation to the heart and arteries. The morbid effects which usually result from the application of cold are inconsistent with this supposition:—these are usually local inflammations in the immediate vicinity of the part which has experienced the influence of the cold, or of some organ which closely sympathises with it. Fever, in place of being the primary disease, often does not occur at all, or only in a very slight degree. Even when it does occur, it is frequently not until after the local inflammation has attained to some height, and evidently as an effect of the latter.

But in whatever manner we may presume the first impression of the remote causes of fever to be made, whether upon the surface of the body or upon the mucous membrane of the stomach, the intestines, or the respiratory organs, or by their being received into the circulation, and acting directly upon the heart or blood-vessels, it is confessed that their first effect is the production invariably of a local irritation.

"Fever," says Dr E. "perhaps always commences by a local irritation. Even when it is the result of causes which act immediately on the internal surface of the vascular system, the irritation is probably at first confined to a comparatively small portion of this system—namely, the heart, or the capillaries of some particular organ or structure, according to the nature of the remote cause."

Those cases of fever in which the heart receives the primary irritation will be found, we suspect, to be extremely rare. J. P. Frank reports, that in the bodies of patients who had died of inflammatory fever, he has met with an inflammation of the lining membrane of the arteries: we cannot, therefore, deny that an irritation or inflammation of the inner surface of the heart or of the large blood-vessels may be occasionally the local disease upon which fever depends; but upon a careful analysis of the phenomena presented in the majority of the cases of fever, we are persuaded that the symptoms of an irritation of the stomach, the brain, or of some of the more remote organs, will be found to exist previously to the occurrence of symptoms strictly febrile, and to be rendered more evident as the fever develops itself, by very

generally passing into a state of inflammation more or less acute.

The chapters devoted to the consideration of miasmata and contagion present a very excellent condensed view of the doctrines ordinarily entertained upon these subjects, especially by the European writers. The correctness of many of these is, however, in our opinion, extremely doubtful; we regret that space is not allowed us to enter upon their examination.

Dr E., while he admits the origination of typhus fever from idio-miasmata, refers, in common with many other highly respectable writers, its propagation, in some instances at least, to contagion. We must confess, however, that none of the arguments which he has advanced appear to us to establish this opinion, while it is in direct opposition with the definition as well as with the laws of contagion which he has himself laid down. Contagion he defines to be—

“A deleterious agent secreted by the animal body in a state of disease, which, when brought to act upon a healthy individual, will produce a disease *specifically similar* to the one from which it derives its origin.” Again, “the power which the acute contagious diseases have of *destroying the susceptibility of the human constitution to the subsequent influence of their specific causes*, constitutes one of the most remarkable and mysterious characteristics of this class of maladies.” “In consequence of this law of *acute* contagious diseases, no malady of this kind can ever relapse during the period of convalescence.”

Now not one of these circumstances, is true, of the fevers usually classed under the head of typhus. The author, it is true, has attempted to prove that typhus fever is a specific disease; in this, however, he has certainly entirely failed.

“How far” remarks Dr E. “a mixture, or the combined agency of *koïno* and *idio-miasmata*, may operate in producing novel or anomalous varieties of fever, it is impossible to say; but that such a combination does sometimes occur, and give rise to fevers of a peculiar or mixed character, will scarcely be doubted by any one who has given due attention to this interesting subject.”

What is exactly to be understood by fevers of a *peculiar* or *mixed* character is somewhat difficult to determine. If by this expression nothing more is meant than the combination, in the same case, of the symptoms of typhus, for instance,

and bilious fever, or in other words, the co-existence of phenomena dependent upon disease of the brain and of the stomach and biliary organs, this, we readily grant, may occur from the joint agency of a variety of causes. In this sense every fever, excepting perhaps simple ephemeral fever, must be considered as of a mixed character—very few cases indeed occurring in which the irritation of the heart is not accompanied with disease of other organs. Dr E. adduces, as an example of mixed fever, “the peculiar fever which prevailed among the blacks in this city a few years ago.” If the epidemic that occurred in 1821, principally among the lowest class of blacks, is here referred to, the author is perfectly correct in denominating it a mixed disease, and in referring its origin to the combined agency of koino and idio-miasmata. We cannot, however, admit that this fever presented any thing peculiar. Its symptoms and progress, as well as the appearances discovered upon dissection, and we speak from numerous personal observations, evinced clearly its dependence upon gastro-encephalic inflammation. In the majority of instances, the affection of the stomach and brain occurred simultaneously; in others, the encephalic inflammation was secondary; in many cases inflammation of the lungs was also present. Fevers simply considered—that is to say, the phenomena dependent upon irritation of the heart, can differ only in their degree of violence; all the other modifications which febrile disorders present, are invariably to be traced to the nature and extent of the organic lesions, which occur as the cause of, or in connexion with the irritation of the heart.

The author's division of fevers is into intermittent, remittent, yellow and continued, the latter being subdivided into synocha, synochus and typhus. We cannot stop to enumerate the numerous objections to which this division is liable. The trifling claim it has to the title of scientific, must be evident from a moment's consideration of the principles upon which it is founded, while the little aid it affords in facilitating the study of either the pathology or the treatment of this class of diseases, can scarcely recommend its adoption on the plea of utility.

In the production of intermittent fever, the author appears to us to ascribe too much to the agency of koino-miasmata.

That this is a very frequent source of this form of disease, there can be no doubt, but that it may, and does frequently arise from nearly all the ordinary causes of fever, we have the most abundant evidence. The fact is even admitted in the work before us, as will be perceived by the following sentence, which certainly contains either a mistake or a direct contradiction in language.

"Although koino-miasmata may be regarded as the universal cause of intermitting fever, yet various other causes may, under favourable circumstances, give rise to this form of fever."

Speaking of the period which sometimes elapses between the reception or impression of the miasm and the occurrence of the fever, Dr Eberle observes, that hence, in order to guard against an attack of the latter,

"Persons who have been exposed to miasmata, ought to be careful to avoid every thing capable of debilitating the system, and particularly the digestive organs, for at least two weeks after."

But this direction is diametrically opposed to a sentiment advanced by him when treating of the predisposing causes of fever, and in the truth of which we concur; viz. that neither debility of the system generally, nor of any particular organ, predisposes it to the influence of the morbid agents concerned in the production of these diseases.

"It is well known," he observes, "that the most robust and healthy individuals are generally the first and most certain victims of febrile epidemics. The vigorous and the healthy are often prostrated under the devastating dominion of pestilence, and even under the less ruthless sway of the milder paludal fevers, whilst the feeble and the valetudinarian pass along untouched. It may, moreover, be observed, that in the feebleness of convalescence from bilious, typhus, and other forms of fever, fresh attacks, or relapses, are by no means so common as one would expect, if mere debility constituted febrile predisposition. When, also, we wish to obviate fever after a surgical operation, we reduce the system by low diet, purgation, and perhaps blood-letting."

While, however, we deny to a state of more debility the power of inviting an attack of disease, it must be observed, that whatever is capable of producing an irritation in either of the principal organs, will have this effect. Hence, as the author has well observed—

"Of all the precautions which those who visit insalubrious climates may be required to adopt, the avoidance of every thing which is calculated to derange the digestive functions, is perhaps the most important."

Upon the author's therapeutic directions for the management of intermittent fever we have little to remark. In the use of the lancet he is, perhaps, rather more reserved than we should be: while in those cases in which the symptoms of gastric irritation are particularly prominent, we should undoubtedly insist upon the propriety of combatting it by leeches or cups to the epigastrium previously to the administration of the bark or quinia, in preference to either "mild mercurial purgatives" frequently repeated, or emetics, as he directs. With these exceptions the general rules of treatment he has laid down are unquestionably highly judicious.

In the only instance in which Dr E. has resorted to bleeding during the cold stage, as recommended and practised by Mackintosh, he found it to moderate the violence of the chills, and to curtail in a manifest degree their duration.

In treating of the period best adapted to the administration of the bark or its preparations, he informs us, that he has reason to apprehend "that a large dose of quinine given during the chills, is calculated to produce some very disagreeable effects."

"In two instances, one a delicate married lady, and the other a lad about twelve years old, a most singular and raving species of maniacal affection ensued, apparently from taking large doses of this medicine after the chills had commenced. In both instances this alarming mental disturbance continued for several hours. "I may" he adds, "be wrong in ascribing it to the cause here assigned, but the circumstances strongly favoured the suspicion."

Dr E. states that, "for five or six years past, whenever I have met with a case of ague which, though arrested by bark, always relapsed again, which generally occurs about the seventh or fourteenth day, I have suffered the disease to run on for at least five paroxysms, and in a few instances over the seventh, before any attempt was made to check it; and I have invariably found this plan permanently successful."

This practice is the one recently advocated by Recamier as the most effectual and the safest for the future health of the patient.

We should doubt the propriety, however, of its general adoption.

Between the simple autumnal *remittent* and intermittent fevers there exists, according to our author, no essential or radical difference. They are produced by the same cause, and differ from each other only in the grade of violence and duration of the paroxysms.

"If we take a general view," he remarks, "of the phenomena of remitting fevers, we may readily perceive that they point to the particular derangement of two important organs—the liver and the alimentary canal. We may perceive, moreover, that there are some cases of this disease in which the phenomena of gastro-enteric derangement predominate, whilst there are others in which hepatic disorder impresses its peculiar stamp or character on the disease. To the former we may apply the term *gastric*, and to the latter *hepatic*."

That the phenomena of bilious or remitting fever are to be referred to an irritation, more or less intense, of the stomach and upper portion of the intestinal canal, extending to the biliary organs, and in many cases affecting sympathetically the brain also, there can be little doubt. To the division, however, of the disease into gastric and hepatic, as proposed above, we object, it being altogether useless in a practical point of view, whilst it is very apt to mislead. The appearance or non-appearance of the bile in the discharges from the stomach, of which this division is mainly predicated, is to be attributed merely to the greater or less degree of irritation experienced by the liver.

What Dr E. means by derangement of the stomach and liver, will be better understood from the following sentence.

"In the treatment of this disease there are three primary pathological conditions, according to which the general indications of remediate management must be directed, viz. 1. Functional derangement of the liver and alimentary canal. 2. Redundancy of morbid or vitiated secretions; and 3. An irritated increased action of the heart and arteries."

Now, "functional derangement" of an organ is, according to our author, synonymous with irritation; the second proposition is therefore involved in the first, for we have already shown that he believes vitiation of the secretions to be in every instance the result of irritation. Hence, also, though vitiated

secretions may increase, it is incorrect to say they produce the irritation upon which they themselves depend.

The same want of pathological precision is evidenced in the author's statement of the indications of cure. These are,

- "1. To moderate the febrile reaction of the arterial system;
2. To remove out of the alimentary canal the vitiated and irritating secretions which may be lodged in it; 3. To restore the healthy functions of the liver and alimentary canal; and
4. To obviate gastro-intestinal irritation."

All of which are, in fact, comprised in the last. To obviate gastro-intestinal irritation, is the most effectual means of restoring to the stomach, intestines and liver, their healthy functions, and of moderating the morbid sympathetic action of the heart and arteries, while it includes the removal of every thing, in or out, of the intestines, calculated to keep up or augment irritation.

The remedial measures proposed by Dr E. for fulfilling the above indications would have met with our entire approbation, had he insisted upon a more general resort to leeches or cups applied to the epigastrium, with the view of relieving the gastro-intestinal irritation, and preventing its extension, or the possibility of its passage into inflammation.

On the subject of bleeding Dr E. remarks, "there can be no doubt that, in particular localities, and under peculiar circumstances of atmospheric constitutions and vicissitudes, remitting fevers may sometimes assume a character which demands the free use of the lancet." We believe that there are few cases of the disease in which some degree of direct depletion, especially by leeches or cups, is not demanded.

"In all maladies," says the author, "the state of the pulse must be our guide, as to the propriety of bleeding, and wherever it is found either *hard* or *tense*, whether it be full or contracted, blood may be safely, advantageously drawn, whatever may be the name or the general character of the disease."

This may be true so far as it regards general bleeding, but we apprehend that many cases do occur in which, though the state of the pulse does not indicate the use of the lancet, advantage will result from the employment of topical bleeding. Here the degree of irritation existing in the organs principally affected must be our guide.

With respect to emetics, the author is inclined to think that

“they may be generally well dispensed with, without losing any peculiar remediate advantages.” Though the operation of an emetic may procure a degree of temporary benefit, “yet some risk will be incurred of its exciting a degree of permanent irritation, which will subsequently exercise a most pernicious influence upon the phenomena and progress of the disease.” This entirely corresponds with our own experience. Even to nauseating doses of tartarised antimony, or as it is administered in the nitrous powders, the author very properly objects, they having a tendency “to irritate the bowels, and to cause frequent and griping watery stools, which rarely fail to aggravate the violence” of the fever: he accordingly recommends ipecacuanha to be substituted in the nitrous powders for the emetic tartar. From small doses of ipecacuanha and calomel we have certainly seen very considerable advantage result in remittent fever, but our experience is rather adverse to the addition of the nitrate of potass to this prescription.

Although Dr E. believes there is no class of remedies more indispensable in the treatment of remittent fever than laxatives, yet he observes very correctly that—

“There are no medicinal agents which are so frequently abused, or improperly employed in this disease, as this very class of evacuants. Violent and irritating cathartics, when repeatedly administered in this form of fever, seldom fail to induce a state of irritation in the mucous membrane of the bowels, from which a train of distressing and dangerous consequences arise in the advanced stages of the malady, which are often of more serious import than the original disease itself.”

In cases of remittent fever attended with “great irritation, or subacute inflammation of the bowels,” Dr E. has so often seen the most decided benefit from an emulsion of balsam copaiva, that he conceives he should be neglecting an important curative means, were he to omit its use under these circumstances. His prescription is as follows:

“R Bals. Copaiv. 3ss. Sacch. Albi. 3ss. Pulv. Gum. Arab. 3ij. misce dien adde aq. fontanæ, 3ij. M ft. Take a spoonful every two hours.”

When this fever is attended with excessive gastric irritability, Dr E. very judiciously ranks blood-letting among the means best calculated to allay this very disagreeable and even alarming symptom.

"To be beneficial in this respect, however, it must be early and copious. I have known excessive irritability of the stomach and retching promptly checked, in the onset of the disease, by one efficient bleeding."

But our limits will not permit us to enter into even a general consideration of the treatment proposed by our author in this form of fever; suffice it to say, that in its general outlines it corresponds with that pursued by our most successful practitioners.

Passing by the very excellent chapter on yellow fever, as well as those on synocha and synochus, two forms of fever, the diagnosis of which being founded almost exclusively on the different degrees of activity in the action of the heart and arteries, do not deserve any particular attention, we arrive at the chapter devoted to *typhus*.

Typhus fever, the author considers, as we have already remarked, to be a disease *sui generis*—"a peculiar form of fever, capable of propagating itself by contagion;"—"a form of fever radically diverse from every other form and variety of febrile disease." Strange, however, as it may appear, he has entered into no argument, nor has he adduced a single fact to establish the truth of these opinions.

Upon an investigation of the nature and causes of typhus fever, our limits will not permit us to enter. We do think, however, that any one who will take the pains to analyse strictly the symptoms which the author has laid down as those characteristic of this form of fever, must be convinced that they all point out, most conclusively, the dependence of the disease upon lesions seated in the alimentary canal and the brain; the latter giving rise to nearly all of those peculiarities which distinguish the phenomena of typhus from ordinary fevers. This statement is fully borne out by the appearances very generally met with after death. Upon the pathology of a large class of those diseases usually arranged under the head of typhus and putrid fevers, we conceive that the publications of Bretonneau and of Gendrin, in reference to the disease denominated by the former *dothinentery*, throw much light.

As to the question of contagion in typhus fever, we can only say, that we have examined it for ourselves, and after weighing duly the facts urged on either side, feel ourselves prepared to deny the production of the disease in any case from other

causes than idio-miasmata, or the ordinary causes of fever, acting upon systems placed under particular circumstances of predisposition.

"It is indeed not to be denied," Dr E. remarks, "that when marsh miasmata, or, perhaps, any of the usual causes of fever, act on a system which has been depressed and debilitated by the enervating influence of cold, want of nourishment, mental distress, &c. a low or *typhoid* state of fever will be developed; but the course and characteristic phenomena of such fevers do not accord with those which mark genuine contagious typhus."

In what, however, the discrepancy between these *typhoid* forms of fever and *genuine typhus* is evinced, the author has neglected to inform us.

Dr Armstrong asserts, and we believe with perfect truth, that remittents often assume the appearance and character of typhus; and that these two forms of fever resemble each other in many of their most striking symptoms. "Remitting fever," he observes, "is always attended with a simultaneous affection of the brain, the mucous membrane of the respiratory passages, the mucous membrane of the alimentary canal and of the liver—a combination of symptoms always present in typhus." But according to Dr E. "the characteristics of typhus do not consist in any of these circumstances."

"With respect," he remarks, "to the alleged conversion of remittents into typhus, it may be observed that the former do, indeed, in some instances, assume a *low* or *typhoid* character; but this may be predicated of nearly every other variety of febrile disease, and cannot be justly urged as an argument in favour of the common origin of the two diseases. I have myself known ten cases of ordinary bilious remittents, brought together in an illy ventilated and narrow apartment, degenerate into low and putrid fevers of a highly fatal character."

But was it not incumbent on the author to point out in what consisted the difference between these low or typhoid cases and the ordinary cases of typhus? Whenever in any fever the brain becomes involved in disease, the change which the symptoms undergo render the case then, in our opinion, as essentially one of typhus as though it had assumed this character from the first?

To the plan proposed by Dr E. for the treatment of typhus fever, we have nothing of moment to object. He is, and we think with great propriety, extremely cautious and reserved in the recommendation of stimulants. He remarks, how-

ever, that "when we consider that ammonia has a tendency to counteract the inebriating effects of alcoholic liquors, we have reason to suppose that the union of these two articles is peculiarly appropriate as a stimulant in this disease." So far as our own experience goes, and a public situation has given us an opportunity of seeing not a little of the disease, we have never found a case, when properly treated in its early stages, to require the administration of alcoholic stimulants, and very seldom one in which even the use of vinous stimulants was called for.

Dr Eberle's chapter "on inflammation in general," contains a very excellent view of the leading facts in relation to this subject. It presents, however, one or two hypotheses, the correctness of which, had we room, we should be inclined to contest. One in particular strikes us as being altogether untenable. It is that which maintains that inflammation of the capillaries of the part affected ought to be regarded as being in a state of "irritated excitement, connected in some cases with an increased, in others with a decreased power of action; and hence, that there is "a typhus and a synochal state of local inflammation," the first requiring stimulants, the second sedative agents for its cure. For our own part, we must candidly say, that we have never seen a case of inflammation in which sedatives appeared to be counter-indicated, or one which was not aggravated by the use of stimulants, properly so called.

One of the modes in which, according to our author, inflammation may be produced, is by *metastasis*.

"Thus," he remarks, "erysipelas will sometimes pass in and fix itself upon an internal organ; and gout will pass from the feet to the stomach, brain, and to various other parts."

Now he certainly does not mean to assert what is here implied—that the same inflammation which is seated in the skin, in the one instance, and in the feet in the other, really passes into the internal organs. This we believe was at one period actually maintained; but a more correct knowledge of the morbid states of the system has long since repudiated this absurd notion, and it is time that the modes of expression to which it gave birth should be rejected also.

The present chapter closes with the following important concession:—

"Pure idiopathic or general fevers, without the accessory

irritation of local inflammation, can never continue very long. Mere morbid excitement from general causes or movable irritants, is generally soon overcome by the organic, or what has been called the sanative actions of the animal economy."

Hence, as we contend, the physician will seldom be called upon to treat a case of fever which is not dependent upon more or less inflammation of some one of the internal organs. As this proposition has a very important bearing in a practical point of view, we are gratified to find its truth thus clearly admitted by our author.

The more prominent phlegmasiæ of the brain and its membranes are treated of with great ability; the same may also be said of the inflammations, acute and chronic, of the alimentary canal. We see no good reason, however, for separating indigestion from chronic gastritis, and placing it, as the author has done, after the nervous affections; more especially, as he recognizes unequivocally the identity of the two diseases. It is true, that in concluding his account of indigestion, he observes:—

"Let it be constantly borne in mind, that functional derangement of the stomach may be the consequence of mere debility and relaxation—or of high irritation and morbid sensibility—or finally, of a chronically inflamed condition of the mucous membrane of the digestive organs."

The term debility, when applied to an organ, conveys to us no definite idea; and until we clearly understand what is the actual pathological condition that is intended to be expressed by it, it is in vain, we are told, that it is to be overcome by means calculated "to increase the tone and activity" of the diseased organ.

Dr Eberle treats of *acute peritoneal enteritis* in chapter xiii.; and in chapter xvi. of *acute peritonitis*. But why these two varieties of peritonitis are thus considered separately, does not appear. We do not believe that the diagnosis between inflammation of the peritoneum lining the abdominal parietes, and that covering the intestines, as laid down by Abercrombie, will hold good at the bed-side; or, provided it were, that it would afford us any advantage in a practical point of view.

Dysentery is ranked as an acute inflammation of the mucous membrane of the alimentary canal, particularly of the colon and rectum. With the etiology of the disease, as given by

our author, we perfectly accord; we must differ from him, however, as to the propriety of at least one of his therapeutical directions. Thus, he remarks, "purgatives, under judicious management, are among our most valuable curative means in this affection." A similar opinion, we are fully aware, is very generally advocated by medical writers, and in the commencement of our practice, we ourselves acted upon it, but were soon convinced that purgatives, so far from proving serviceable in dysentery, very generally tended only to augment the tormina and tenesmus; accordingly, for several years, instead of resorting to them, we have endeavoured to put a stop to the abnormal action of the bowels by the administration of opium in combination with ipecacuanha and acetate of lead. By this means, in conjunction with bleeding, either general or topical, as circumstances may indicate, fomentation to the abdomen, or blisters, the disease has almost always very promptly yielded—more readily, we think, than under the ordinary purging plan, and certainly with a great deal less of suffering to the patient.

Speaking of rheumatism, Dr Eberle observes, that—

"Whatever ideas may be entertained in relation to the proximate cause of rheumatic inflammation, it is now generally admitted, that the seat of the inflammation is in the *fibrous textures*—more especially in the aponeuretic and tendinous structures of the body. It is manifest, moreover, that this inflammation differs very materially from the other varieties of inflammation; and the opinion of Scudamore, that it is *sui generis*, of a strictly specific character, is supported by its peculiar character and phenomena."

Is it not, however, more accordant with a correct pathology to ascribe the peculiarities exhibited by rheumatic inflammation, to the particular organization of the tissue in which it occurs, than to any supposed specific difference in its nature or cause? The phenomena of inflammation differ invariably, according to the structure of the parts in which it is seated. Inflammation of the fibrous tissues assumes invariably the same essential character, and we have no more reason for ascribing to it, on this account, a specific nature, than to either the inflammation of the skin, or of the cellular mucous or serous tissues, each of which differs from the others in the phenomena to which it gives rise.

The frequent and often rapid metastases which occur in rheumatism, Dr E. conceives to indicate "something radically distinct, if not in the inflammatory action itself, at least in its immediate or proximate cause."

"This circumstance, too, favours the opinion, that the disease consists in a peculiar diathesis, or general morbid condition of the system; the local inflammation being merely one of its effects or external manifestations."

The dependence of inflammation on "a general morbid condition of the system," in any instance, is a mere hypothesis, unsupported by any well established facts. If the circumstance of its liability to metastasis were to be taken as an evidence of this dependence, few cases of inflammations from any other cause would be found to exist, for there are certainly few in which metastasis may not occur.

In his account of the treatment of rheumatism, Dr E. makes the following remark, which corresponds perfectly with our own experience.

"Opium, under judicious management, is a valuable remedy in acute rheumatism. When employed in full doses, after proper venesection and purging, in combination with calomel, or with ipecacuanha, or tart. antim., it seldom fails to procure immediate relief, and to hasten the resolution of the local and general inflammatory action."

Gout is defined by our author to be "a constitutional affection, depending on a peculiar diathesis, and manifesting itself in its regular form by external local inflammation of the fibrous structures, and fever of the synochal grade." After an enumeration of some of the leading doctrines which have been advanced in relation to the pathology of gout, we are presented with the following as the author's own views:

"It can scarcely be doubted, that some defect or derangement of the reproductive functions lies at the bottom of the evil; and that this primary dynamic disorder, in conjunction with its consequent *humoral* depravation, constitutes the fundamental pathological condition of the system in gout."

The opinion thus obscurely worded is not further explained, nor is it attempted to be supported by facts or arguments.

The invariable and intimate connexion which exists between gout and an affection of the alimentary canal, especially of the stomach, is recognized by nearly all modern pathologists.

A disordered condition of the digestive function precedes for some time the onset of the disease, while each paroxysm is ushered in by pain or uneasiness at the epigastrium, a depraved or defective appetite, flatulence, acidity of stomach, a furred tongue, nausea, pain of the head, vertigo, &c. For some time previous to the attack it will be found that the patient's bowels have been costive, and it is not unfrequent, according to Scudamore and others, for a bilious vomiting and diarrhœa to be the immediate precursors of a paroxysm. "The stomach" says Cullen, who appears to have studied the disease with considerable attention, "which has so universal a consent with the rest of the system, is the internal part that is the most frequently, and often very considerably, affected by the gout. The paroxysms of the disease are commonly preceded by an affection of the stomach. Many of the exciting causes act first upon the stomach; and the symptoms of the atonic and retrocedent gout are most commonly and chiefly affections of the same organ." These circumstances, as might be expected, have led many of the modern writers to consider gout as primarily a disease of the stomach, or probably of the chylopoetic viscera generally. "The stomach" says Scudamore, "is truly the part in which the gout is produced." By Broussais and his followers this doctrine of the gastric origin of gout is, of course, adopted and strenuously maintained. In the peculiar language of this celebrated teacher, gout is an actual gastritis, or rather a gastro-arthritis. Dr Rush strongly contested the idea of the disease being located in any particular tissue or organ—it is, he declares, an affection of the whole system, it attacks the ligaments, blood-vessels, stomach, bowels, brain, liver, lymphatics, nerves, muscles, cartilages, bones and skin. Though, in a certain sense, the fact intended to be conveyed by this language may be admitted; yet, the mode of expression is so extremely vague, as to be liable to mislead. It is very evident that gout, take it for instance in its regular form, does not affect at one and the same time every organ and tissue of the system, and even if it did in its progress, this militates nothing against the idea of its strictly local origin. That organ in which symptoms of morbid derangement are first per-

ceptible, we cannot but consider as the one in which the disease commences, and through which it is extended to other parts. In gout, the first indications of disease, as we have seen, present themselves in the stomach; hence we are compelled to believe that this is the organ primarily affected and upon the morbid condition of which, and through its sympathetic influence upon other parts all the phenomena of the disease depend.

The space to which we are restricted will not permit us to enter fully into a defence of the opinion here advanced. From the same cause we are unable to discuss the points upon which we differ from Dr E., in regard to the treatment of gout: these, however, are fewer and less important than would be anticipated from the difference of our pathological views. We certainly attach a greater degree of importance to the employment, in this disease, of bleeding, both general and topical, than our author does: while we can conceive of very few cases indeed, in which we would venture upon the exhibition of an emetic.

When treating of the prophylactic means proper in gout, Dr E. very correctly observes:

“ Little or no dependence is to be placed on any measures in this respect, except on such as are calculated to restore the healthy action of the stomach, liver, and skin; and especially on the adoption of proper regulations with regard to diet and exercise.” Under the latter head he enumerates—“ abstinence from high seasoned and very nourishing diet, and from all kinds of fermented liquors, with regular exercise in the open air.”

To these we would add the equally important item—entire abstinence from every species of distilled liquors.

When gout attacks the stomach, Dr E. recommends, on the authority of Cullen, the administration of “ heating and stimulating remedies,” as “ laudanum in large doses, (from eighty to one hundred drops) with warm spiced brandy, and a large sinapism over the stomach,” as unquestionably the best practice in many cases. This may be correct when we are certain that the affection of the stomach is a simple gastralgia. But when, in gout, the local affection ceases suddenly in the feet, and is immediately followed by a disease of

the stomach, bearing all the characteristics of an inflammation of that organ, as is very frequently the case, then we insist not only that the remedies above recited are, as the doctor has admitted, improper, but that the life of the patient depends upon a prompt recourse to bleeding, leeches, and all the other remedies indicated in a case of ordinary gastritis, in conjunction with sinapisms or other stimulants to the extremities. "Although," remarks Guilbert, "the medical treatises make no mention of arthritic gastritis, yet we should consider it of extremely common occurrence. Our own observations, as well as the attentive perusal of medical writings, have enabled us to detect genuine cases of gastritis in those gouty affections of the stomach which are generally considered as purely nervous." Hoffman is almost the only one among the older writers who has recognized arthritic gastritis, and the extreme frequency of its occurrence; his opinions on this point will be found in a little treatise "*De inflammatione ventriculi frequentissima.*"

The chapters which succeed that on gout, are devoted to the exanthemata. With the exception of a few points, of the correctness of which strong doubts may be entertained, the opinions advocated by Dr E. in relation to the pathology of the diseases arranged under this head, will be found correct, and his directions for their management extremely judicious.

On the subject of varioloid, or modified small pox, our author refers exclusively to the statements of the English writers; particularly Thompson and Gregory. We regret to find him overlooking thus the experience of our own physicians in regard to this form of disease. The facts contained in the paper of Drs Mitchell and Bell on the epidemic small pox which occurred in this city in 1823—24*, the report of the Philadelphia Medical Society, on the epidemic of 1827—28†, and Dr Gibbons's sketch of the variolous epidemic which at the same period prevailed at Wilmington, Delaware‡, independent of others to be met with in contemporary publications, are certainly of sufficient importance to demand a collation with those furnished by the English, French, and German writers.

* See the second volume of this Journal.

† See No. 10, Ibid.

‡ See No. 15, Ibid.

From the opinion expressed at the close of the following paragraph, we must beg leave entirely to dissent.

"It is believed by many that the constitutional influence of the vaccine disease gradually lessens, until the system, though at first protected by it against the variolous contagion, regains in the course of years its original susceptibility to small pox, and this opinion is in fact strongly countenanced by the results of experience."

Ample opportunities have been afforded us for testing the preservative powers of vaccination, and we are enabled to say unhesitatingly, that whenever the system has been placed fully under the influence of the vaccine virus, it enjoys as perfect protection against an attack of small pox, after the lapse of twenty as of two years. It is true, that among a number of individuals, all of whom have been successfully vaccinated, and all equally exposed to the contagion of small pox, some will be attacked with the latter in its more or less modified form, while others will escape entirely. But this circumstance can only be referred to idiosyncrasy, it has no reference whatever to the length of time which has elapsed subsequently to vaccination.

"I am induced," says Dr E. from considerations previously stated, "in common with many others, to regard *varicella*, (or chicken pox,) as a variety of spurious or modified small pox, or at least as being referable, for its ultimate source, to the same contagion which produces this disease." In the correctness of this opinion we fully concur.

Dr Eberle admits the correctness of the old division of hemorrhages into active and passive.

"Hemorrhages are called passive," he remarks, "when there is neither sanguineous congestion, nor a sense of heat and fulness, but a *decreased*, instead of an *increased* vascular activity, both of the general system and of the part from which the hemorrhage occurs; the exhalents suffering the blood to escape passively, from want of vital activity to resist its entrance and transmission."

The author describes here a pathological condition which we deny ever to occur in spontaneous hemorrhages; but this point is so fully discussed in a paper by Dr Condie, contained in a former number of this Journal, (Vol. III. No. 2, p. 236) that it becomes unnecessary to enter into an examination of it on the present occasion.

The second volume opens with the consideration of the chronic nervous affections, including apoplexy and palsy, amaurosis, the convulsive diseases, mental derangement, &c.

The manner in which this portion of the work is executed, reflects great credit upon its author. Many of his positions may, undoubtedly, admit of not a little criticism; but this is true in relation to perhaps every other writer who has attempted an investigation of the diseases here embraced, nor is this surprising when we reflect that many even of the physiological points involved in their pathology remain as yet subjects of dispute. We cannot enter into any examination of the opinions advocated by our author,—the subject is so copious that a mere analysis would occupy many pages. In relation to the seat, nature, and treatment of hysteria, epilepsy, and asthma, he appears to have entirely overlooked the work of Georget, *Recherches sur les Maladies Nerveuses*. We are surprised to find, also, that he has omitted to treat of the convulsions of children. These are unquestionably mere sympathetic affections, but not more so than other diseases of the same class; while the frequency of their occurrence, the great importance in all cases of a prompt resort to efficient remedies, as well as the confused opinions which generally prevail upon their pathology and treatment, would seem to call for their separate consideration in a systematic treatise like the present.

Dr E. has given a very excellent chapter on delirium tremens; we are of opinion, however, that had he consulted the recent treatise of Barkhausen, *Beobachtungen über den Säufferwahnsinn**, he would have gained some important hints in relation to the pathology of this disease, and the treatment adapted to the several forms under which it occurs. Although we admit that opium is the chief remedy for delirium tremens, yet experience has taught us that many cases occur in which, from the great tendency there exists to cerebral congestion, opium cannot be administered with safety, until this tendency has been obviated by other remedies, especially by cups and cold applications to the head, and nauseating doses of tartarised antimony, or ipecacuanha. This fact is also strongly insisted upon by the author just referred to. Dr E.

* For a review of this work see Vol. VII. of this Journal, page 301.

speaks of "free purgation" in this disease: our own experience is decidedly against the use of purgatives to any extent, at least in the generality of cases; whenever we have employed them we have found them to be injurious.

Whooping cough is a disease of very great interest, as well from the mortality by which it is frequently attended, especially when it occurs as an epidemic, and its tendency even in its milder forms to call into action that peculiar morbid condition of the lungs upon which the production of tubercles depends, as from the degree of empiricism by which its treatment has heretofore been marked. The views of Dr E. in regard to its pathology, are summarily expressed in the following paragraphs.

"It appears to me that whooping cough is essentially a spasmodic or nervous affection, the proximate cause of which consists principally in a peculiar irritation of the eighth pair, or the pneumo-gastric nerves." "The peculiar tone of the cough, and the sense of constriction which is felt at the glottis, may arise from the irritation extending to the recurrent branches of the vagus nerve; and that this irritation is peculiar or specific in its character may be inferred from the nature of its exciting cause,"—a specific contagion.

This is very nearly the same opinion as that advocated by Hufeland, Jahn, Wendt, Bauer, and other German writers; it receives, however, little or no evidence in its support from the result of dissections. Breschet, it is true, detected a slight reddening of the pneumo-gastric nerve, but this occurred in only two of the cases which he examined. Bauer also mentions that in some instances he observed a diseased condition of the nerves of the lungs. But on referring to the dissections recorded by numerous writers*, it will be found that the mucous membrane of the bronchia and the brain are the parts in which morbid alterations most frequently exist in the bodies of those who fall victims to pertussis. According, however, to our author, many cases occur in which "no morbid appearances whatever are discovered on dissection, and there are good grounds for believing that the inflammation and other phenomena which have been detected on post mor-

* We have particular reference to those of Lettsom, Badham, Whatt, Webster, Hastings, Marcus, Malden, Coiter, Wardrop, Ozanam and Guibert.

tem examination, have no essential connexion with the disease, but are altogether adventitious or secondary."

This is a broad assertion, and scarcely tenable in opposition to the facts to which we have just alluded, or the arguments drawn from the phenomena of the disease itself. Desruelles, one of the latest writers on this disease, maintains that it is a bronchitis, which in its progress becomes complicated with a cerebral irritation and congestion—that this encephalic irritation assumes an intermittent form, and is the primary organic cause of the convulsive cough characteristic of the disease. He proposes, therefore, to designate the disease by the term *broncho-cephalitis**. The facts and arguments which may be adduced in favour of this pathology press it strongly upon our attention.

The dependence of whooping cough upon a specific contagion, as our author maintains, is far from being proved. Upon this question, however, we cannot now enter.

In the chapter devoted to *angina pectoris*, the author, in speaking of the remedies adapted for the relief of the paroxysms, observes that "Richter admits that much relief may sometimes be obtained from vomits; but he asserts that they may also really do a great deal of harm." Now unless it had been stated what were the peculiar circumstances under which the administration of emetics was found to be beneficial or injurious, the foregoing sentence conveys no useful information; on the contrary, it may lead young practitioners to try the effects of these remedies in cases in which they are absolutely injurious; we are happy to say that few sentences of so vague a character as the present occur in those portions of the work, at least, which treat of the cure of diseases.

The directions which Dr E. gives for the treatment of *cholera infantum* appear to us in some respects superior to those generally found in the books. The following, at least, is of very great importance.

"I generally commence the treatment with the application of from ten to twelve leeches to the temples, the exhibition of minute portions of calomel and ipecacuanha, and a large stimulating poultice over the abdomen. I am persuaded by what I

* *Traité de la Coqueluche*, &c. Paris, 1827. See a review of this work in the ninth volume of this Journal.

have repeatedly observed in my practice, that great benefit will in general result from local depletion from the head, as well as the application of blisters behind the ears, or on the back of the neck, in this affection. Within the last four years I have not treated an instance of this complaint in which I did not at once apply blisters behind the ears, and in most instances, it appeared to me, with unequivocal advantage. This, at least, I may confidently affirm, that since I have adopted this practice I have been much more successful in the management of this disease than previously.

We had marked for comment several passages in relation to some of the remaining subjects treated of in the second volume; but we have already exceeded our prescribed limits, and must here close. In running rapidly, as we have done, over the work of Dr Eberle, we have ventured to dissent freely from such of his opinions as appeared to us of doubtful authority. Our criticisms will, we are persuaded, be received by the author in the same spirit by which they were dictated. We regret that the space which these have occupied has prevented us from doing justice to those parts of the treatise which demand unqualified approbation. The talents, industry, and variety of research necessary for the production of a system of practical medicine, are possessed by few, and when we say, as we do with great candour, that the treatise before us will bear a very favourable comparison with any modern work of the same class, while it is far superior, as well in regard to the soundness of its pathological views, generally speaking, as to the excellence of its therapeutic precepts, to the more popular of the English systems, we confer upon it and its author no mean praise. Many of the objections to which, in our opinion, it is now liable, will, we have little doubt, be removed in the event of a second edition.

ART. VI.—RECAMIER'S TREATISE ON CANCER.

Recherches sur la traitement du Cancer, par la Compression Méthodique simple ou combinée, et sur l'histoire générale de la même maladie: suivies de Notes, 1. Sur les forces et la dynamique vitales; 2. Sur l'inflammation et l'état fébrile. Par J. C. A. RECAMIER, Médecin de l'Hôtel Dieu de Paris, Professor, &c. &c. Tom. 1 et 2, pp. 560 et 731, avec planches.

One is almost astounded at the announcement of a monograph, which fills more pages than most writers have required to teach the whole practice of physic, and is ready to imagine that it is impossible to write so much upon one disease, without inserting much that is trite, trifling or irrelevant. Such were our impressions on taking the two massy volumes in hand, but not such are those left by the examination. The details are [minute, but not trifling; they are not spun out of the brain of a mere closet speculator, but are such minute facts and observations, as constitute accurate knowledge. We know of no work which approaches nearer to being a good substitute for clinical observations, and it may be commended for its perspicuity and happy arrangement. The author, having stated the plan of his work in the preface, says, "thus, if the reader follow the order in which the materials are here presented, he will find himself associated with me in my researches, and in the same situation that I was in while collecting them."

It will be readily perceived how difficult, nay impossible, it is in the compass of a few pages to present any thing which would deserve the name of an analysis of 1300 pages. All we propose to do at present, is to notice the plan of the work, and to present such parts as seem to possess the most practical importance.

In 1817, a remarkable case of carcinomatous mamma came under the notice of Professor Récamier. Internal remedies had been tried without effect; and the volume of the tumour and the constitution of the patient precluded the idea of an operation. In this extremity he resorted to compression, a treatment hitherto not introduced into French practice, and

which was approved of by none of the most eminent English surgeons. Treatment by compression had been highly recommended by Mr Samuel Young; but the success of the trials of this practice by other English surgeons was such as they could account for only by supposing that Mr Young mistook the character of the disease. The effect of compression in that case made a strong impression on Mr Recamier, but the authorities, with the exception of Mr Young, were all so decided against it, that he continued the usual, and, as he considers, only palliative treatment until 1825; for cancers recur in so large a majority of cases after an operation, that all surgeons are brought by experience to be averse to operate in these dreadful cases.

In 1825 our author commenced a course of practice and observation, the detailed results of which constitute the work before us, and which are arranged in what may be considered an inductive method. Instead of first advancing his theories or general principles, and then adducing cases to confirm them, he first presents his facts or data, and then proceeds to his inductions, thereby giving the reader the best opportunity of judging of their fairness.

Part I. contains the history of sixty-two cases of cancerous breast. Part II. contains the history of thirteen cases of cancer in other parts of the body than the breast. To this part a supplement is added, containing two additional cases, and a further notice of some of the cases in Part First,—this supplement having been written subsequently to the printing of that part. The Second Part closes with a tabular recapitulation of the foregoing cases. These cases occupy more than four hundred pages, and are related with the most satisfactory completeness, precision and perspicuity. Part III. contains a classification of cancerous tumours of the breast; the treatment, both external and internal; a minute account of the excision of the uterus, illustrated with plates, and more than twenty additional cases. A short section, containing the principal results of the author's researches upon cancer, concludes this part, and likewise the first volume. Part IV. contains the author's researches upon the general history of cancerous diseases, and extends through two hundred and forty pages. The notes, which occupy the remainder of the

volume, as may be seen by a reference to the title of the work, have no immediate connexion with the subject of cancer.

It is a too common fault of authors and lecturers to consider it trifling, as a mechanical drudgery, which would degrade genius, to descend to minute details on the mode of using therapeutical agents, and to content themselves with announcing and discussing general principles and giving general directions. Such instructions may be sufficient for a few members of the profession; but there are many more, who, for want of precise directions in the employment of remedies, are never able to give them a fair trial. To this circumstance may often be attributed the contrariety of opinion entertained of the value of certain remedies. In regard to the employment of many of them, therefore, let it be remembered, the manner is every thing.

These remarks have been occasioned by an apprehension that some will tax us with tediousness, for giving the author's views so fully on a few points, and neglecting much more that would add to their variety and interest. But as M. Recamier's treatment appears to be a decided improvement, if we may judge of it by his reported success, and as it is improbable that it would be fairly tested by others without his precise directions, the interests of the profession and of humanity will be better subserved by entering into such details as shall enable the reader to *make a fair trial* of it, than by our skimming along rapidly, and giving such glimpses of all the prominent points, as to enable him merely to *talk* of the author's peculiarities. For all which follows, credit is due to the author, unless we should be so unfortunate as to obscure or misrepresent him; as no commentaries or criticisms of our own will be interposed.

All cancerous diseases of the mammary glands do not present the same aspect, and the author adopts the following classification of them:

1. Some form diffuse engorgements in the parenchyma of these organs.
2. Others constitute isolated tumours, which seem to involve the proper tissue of the breasts only consecutively.
3. Others partake of the characters of parenchymatous engorgement and of isolated tumours.

4. Others have, as their most prominent phenomenon, local neuralgic pains, which either precede or accompany the development of the engorgements or the tumours.

5. Others, with engorgements, tumours and pains, present softenings (*ramollissemens*), or ulcers, more or less superficial or deep, but always possessing the refractory character of cancerous affections.

These distinctions the author considers essential in reference both to the prognosis and the treatment.

1. *Diffuse engorgements*.—In diffuse engorgements, the parenchyma of the organ acquires density, is changed, becoming at first scirrhus, then encephaloid, &c. The disease commences indifferently at the centre or circumference of the organ, without our being able always to determine its limits exactly by the touch. It is often preceded by kernels of greater or less density, which resemble circumscribed tumours. In these cases there is a sort of transformation of the normal tissue into scirrhus or cerebriform parenchyma, in different degrees, and of either a homogeneous or heterogeneous aspect. When the engorgement presents these characters, partial excisions of the diseased organ are commonly followed by a relapse; or rather the same affection continues to be developed in portions of the same organ, which had been saved as being sound.

When a gentle, equal and continued compression is applied to this kind of engorgement, if the density diminishes at the same time in the whole extent of the tumour, and the organ return to its normal state, without atrophy, and without there remaining an isolated and dense kernel, we may hope for entire success.

If the engorgement diminish, leaving a distinct kernel, which increases in density, it takes on the condition of circumscribed tumours. If, instead of being resolved or becoming circumscribed, the engorgement invades other parts of the affected organ, the result of the treatment will not be favourable, whatever external or internal means may be employed.

If the nature of the parenchyma is not altered, resolution takes place in this sort of engorgements in some weeks, and if the disease be farther advanced, in three or four months; but if disorganization have supervened, resolution becomes

more and more difficult. The more the organization is altered, the less susceptible is it of return to its normal state; and the only resource left is atrophy or excision.

II. *Circumscribed tumours.*—This class of cancerous affection is characterized by an isolated tumour, either movable or adherent, whether it have its seat in a part of the breast, or occupy the whole mammary gland, or have its seat in the cellular tissue without the gland. In all these cases, the tumour appears to constitute, from the first, a scirrhus or carcinomatous engorgement, however small may be its volume. It is easy to determine, by the touch, the limits of this sort of tumours, which, left to themselves, extend, contract adhesions with neighbouring parts, which they assimilate to themselves.

The resolution of these tumours, treated by compression, is so much the more difficult, as they are more dense and isolated; it is not always possible, but may be accomplished in some cases. When the result is to be favourable, the tumour gradually ceases to be limited, and its kernel, instead of acquiring density, loses it daily. From this, it is perceived, that in circumscribed tumours, decisive success is obtained, by compression, only by bringing them to the condition of diffuse engorgement.

When these tumours are not encysted, and they are extirpated, they commonly sprout anew. When, on the contrary, they are compressed, the whole periphery of the tumour is resolved in such a manner as to leave a kernel, which becomes more and more dense, and is gradually changed into a fibrous substance, more or less compact, without the parenchyma of the affected organ being restored.

There are some cases where the volume and density of the tumour deprive it of the action of compression. Resolution in these cases, when it takes place, is slow, and we arrive at a kernel, which resists a great while, and is changed into fibro-cellular tissue only after a long time. Circumscribed engorgements, where resolution stops, under the use of compression, by the formation of a kernel, more or less refractory, proceed like extraordinary tissues or *nævi*: we can destroy or reduce them by compression, but we can never bring them back to the normal state, because there is a limit where the texture of

organs, on account of the changes they have undergone, is no more susceptible of returning to its primitive state.

III. *Simultaneous diffuse engorgements and circumscribed tumours of the breast.*—In very fleshy persons, a circumscribed tumour in a mammary gland is often associated with a general affection of the organ and of the cellular tissue which surrounds it; and there is consecutively associated with it engorgement of the lymphatic ganglions, and even of the opposite mammary gland. If this sort of tumours be compressed, a part of the diffuse engorgement is dissipated, but the principal kernel resists, and obstinate infiltrations supervene in the neighbourhood; if an operation be performed, there is a relapse, whether compression be employed after the operation, or not until after some delay.

IV. *Tumours or engorgements accompanied with neuralgia.*—In very irritable subjects, engorgements are sometimes developed, in which neuralgic pains form a principal trait in the disease, whether they precede or follow it. The author has seen neuralgia precede by several years, not only the cancerous engorgements of the breasts, but likewise those of other organs. Engorgements and tumours of this sort are very refractory.

V. *Tumours with softening.*—In whatever manner the disease may commence, there are cases where, when medical aid is first required, points of softening are found to exist. In this state, compression appears to be useful only for disgoring the circumference of the tumour, in order to proceed afterwards with more facility to extirpation, if we have not already to manage a case of relapse. Compression upon a softened kernel is never successful.

VI. *Ulcerated cancerous tumours.*—In eight cases, Professor Recamier was not consulted, until after the ulceration of the cancerous tumours. Compression, in this case, did not seem to him applicable with advantage, before he had got rid of the ulcer, and his success was the more decisive, in proportion as the riddance was more complete.

Treatment.—Should it be eventually proved that cancerous tumours and engorgements, which disappear by the simple means of compression, do not return; as those do which are destroyed by excision, cauterization and ligature, with what-

ever care these operations may be performed; compression must render important services in the treatment of cancerous tumours, the prognosis of which has been little changed by the result of *other* operations and therapeutic agents; for cancers sprout anew in so great a number of cases, that this disease becomes a *noli me tangere* to every surgeon in proportion as he is impressed with the inutility of his efforts to prevent a relapse after excision. Our author confirms his opinion of the very rare utility of cutting out cancerous tumours, by quoting the authority of Boyer, whom it would be very advisable for every one to study attentively, who is ambitious to be an operator.

External treatment. Compression.—Upon whatever part compression is applied, it should be gentle and perfectly equal upon all points, except such increase of pressure as circumstances alone can indicate. Linen rags, lint, chamois-leather, and every thing which readily hardens by pressure are unsuitable. Agaric in fine leaves, very even, thick, if the tumours have much prominence, and thin, if they have none, or have lost it, is esteemed by professor Recamier as the most suitable substance, and that which best preserves its elasticity. The trials which he has made with the dressed skins of the deer, chamois and sheep, with cotton wadding, and with bladders inclosed in a leather bag and distended, have produced no satisfactory results. The same results have been obtained from the use of thin plates of gum elastic, lead and tin, which, being impermeable to transpiration, maintain upon the part a hurtful moisture. The author likewise rejects the use of elastic bandages with cushions, for fear of changing the conformation of the thorax, and on account of the difficulty of effecting the necessary modifications in the cushions.

The author employs for the breasts two bands, which are commonly two inches and a half wide, and from ten to twelve yards long, without either hem or projecting seams. He has employed flannel in making them, which is elastic and very easily adjusted; but as this bandage sometimes occasions a distressing heat, he prefers bands of linen or percale. For persons rather fleshy, one of the bands ought to be about three inches and the other only two inches wide. The broader of the two is employed to secure the first layers of agaric, and

to sustain the breasts; the narrow one is easily applied so as to produce a very equal pressure.

Professor Recamier first places a broad layer (*disque*) of agaric immediately upon each breast; he afterwards constructs upon the diseased breast a truncated cone, by means of other layers interposed, (one at a time if they are thick, and two, three or more layers if they are thin,) between the successive turns of the bandage. The cone, with an elevation of three or four inches, should be so constructed, that the centre of the pressure may fall upon that part of the base of the cone which corresponds to the point of the tumour which requires the most pressure. If the tumour be very prominent, the author employs a very thick and supple lamina; or from four to six of them together: then he takes thinner laminæ, or diminishes the number, so that the tumour may not be entirely imbedded in the base of the cone of agaric; and he finishes the treatment by making the base of the cone a little convex, by interposing between the broad laminæ some narrower ones, which occasions the centre to project so as to act upon the last remains of the engorgement.

If the tumour have several prominent points, after having placed the laminæ which embrace the whole of it, the author constructs upon each of the principal eminences a small truncated cone, and finishes the dressing by applying broad laminæ, which reunite the summits of all the small cones in such a manner as to form only one.

Engorgements in the axillæ are often compressed with difficulty, and it is indeed upon the treatment of these engorgements that the whole difficulty sometimes turns. Professor Recamier has been able to produce compression in these cases only by means of compresses made in the following manner. He cuts a lamina in the form of a right angled triangle; upon this he cuts a second, which is less extended towards its long side; he thus cuts successively eight, ten, twelve, twenty, thirty, &c. always diminishing them on the long side, and leaving them parallel at their right angle, which is rounded in order to accommodate it to the hollow of the arm-pit. In this manner he prepares a compress in the form of a truncated pyramid, and secures it there by turns of a bandage carried in

form of the figure 8 around the shoulders and axillæ, which are protected by means of soft agaric from the immediate action of the turns of the bandage, which the arm wrinkles and hardens by approaching the body. This compress, accommodated to different cases by its dimensions, its form and thickness, has been found very serviceable. The pieces of which it is formed are fastened together by a strong thread, sometimes making the summit towards one of the angles, and sometimes in the middle, according as circumstances shall require for its compressing the engorgement in the best manner. Those cases where the tumour escapes under the pectoralis major demand a cushion placed upon the external part of the subclavian region.

There are persons who endure pressure neither on the upper nor lower part of the sternum. In such cases, Professor Recamier applies the bandage obliquely, and describes three modes of doing it, which being somewhat tedious and intricate we shall omit, as he justly observes that these bandages vary in a thousand ways, and a person will hardly be able to apply them twice alike. The important point is, he says, not to repeat in a servile manner always the same turns of the bandage, but to devise, each time, the means of applying them more evenly, and in a manner as little distressing as possible. The constriction should be carried only to a very moderate degree, especially in the commencement, for otherwise a fever might be brought on, which happened in some of the author's cases.

The head of the patient should be laid high during the whole time the bandage is employed, and if baths are made use of they ought to be taken immediately before the hour for renewing the bandage.

When the disease shall be terminated, the bandage should be discontinued only in a gradual manner, by diminishing slowly the number of laminæ; and compression should not be entirely left off until several weeks after the complete restoration of the engorgement, even though it were of recent origin and have been easily resolved; while, if restoration has been slowly accomplished, or the engorgement has been of long standing, it should be discontinued only after many months.

The compression of other cancers than those of the mam-

mary glands should be accomplished with appropriate apparatus; but it is impossible to lay down precise rules for this purpose, each region of the body and each form of the tumour requiring special modifications. Elastic bandages may be employed in the treatment of cancers of the face, and the author thinks, also, that for sarcocele, we ought to use concave and elastic cushions. His trials upon affections of the scrotum have hitherto been confined to suspensory bandages, in which he has put *agariç*. By this means he has cured hydrocele.

II. *Cauterization*.—For cauterization, Professor Récamier employs the concentrated nitric acid, to each ounce of which he adds half a drachm or a drachm of crystallized nitrate of mercury. He places the part to be cauterized in the situation most favourable for keeping the caustic applied to it, and employs a quantity of the nitrate proportioned to the extent which he intends to give to the eschars. He applies the caustic liquor by means of dossils of lint, held in a pair of dressing forceps. If he wishes the caustic to act to a considerable depth, he allows the dossils to remain on the parts to be cauterized, pressing from time to time upon the lint with the extremity of the forceps, and watching at the same time the neighbouring skin, which he wipes immediately with soft linen, if the caustic should spread.

This mode of cauterizing has the inconvenience of producing a very acute pain, which continues a long time. When the cauterization is very extensive, a fever may supervene, which is to be combatted by bathing and by cooling drinks. When the cauterization is done, the pain is assuaged by applying to the part dossils of lint, soaked in a strong solution of opium. Verjuice, combined with opiate preparations, has appeared to the author to increase their anodyne properties. If the pain of the inflammation, which accompanies the separation of the eschars, should become very severe, he employs emollient poultices, leeches around the inflamed part, and even blood-letting and all the antiphlogistic means.

After cauterization by caustic potash, as well as by nitrate of mercury, unless it should be very painful, compression should be continued, proportioning it to the susceptibility of patients. The author applies to the eschars powdered charcoal, adding to it sometimes red bark, and likewise

if the aspect of the granulations be not good. The sore is easily cleansed by a stream of water from a common syringe, and this method is less painful than wiping it. When the sore assumes a favourable appearance, the author exchanges the use of charcoal for dry lint, or very soft and washed agaric, which he employs dry, or soaked in oil of sweet almonds, mixed with one-eighth of lemon juice. When there is much suppuration, the dressing should be renewed twice a day. He thinks, when caustics are employed, the diseased tissue should be entirely destroyed.

When the progress of the disease is very rapid, and when cauterization is thought preferable to excision, it is not necessary to wait for the eschars to drop off, but to remove them and cauterize immediately, in order to suspend the compression as short a time as possible.

If, besides an engorgement of considerable duration, already softened and ulcerated, there be found towards the axilla another engorgement of a bad character and rapid in its progress, a large opening should be immediately made with caustic potash, at the most prominent point of the secondary tumour, in order to be able to destroy it afterwards more easily. When a longitudinal eschar has been formed, an incision must be made, penetrating the centre of the tumour; if it is softened, a part of it is removed, and the rest destroyed by the nitrate of mercury. It is dressed by compression, from the circumference towards the centre, and especially towards the armpit.

If the fleshy granulations should become pale in the course of the treatment, they may be revived by a mixture of oil of sweet almonds and lemon juice, or with honey of roses. The aqueous solution of sulphate of iron is regarded by the author as a useful lotion in some cases; and he has employed also lotions of sulphate of copper, sulphate of zinc, acetate of lead, &c. but not enough to give any positive results.

Cauterization of fungus, and of the cancerous edges of ulcers of the uterus, is executed with the nitrate of mercury, by means of a *speculum* of tin well adjusted and of convenient dimensions—observing as much as possible to place the patient in such a manner, that the surface to be cauterized may be directed upwards, in order that it may serve as a floor or re-

ceptacle for the caustic, which would thus act more on the part. During the cauterization, be particular not to let go the speculum, lest the caustic should escape upon the adjoining parts. Have constantly a syringe filled with warm water, for injection immediately into the speculum, when it is desired to diminish the action of the caustic, or to moderate the heat of the instrument evolved by the application to it of the acid. Long curved dressing forceps are necessary, such as can be managed with facility at the bottom of the speculum, for applying dressings charged with the nitrate, and for cleansing the part.

As the pain of cauterizing the neck of the uterus may strongly affect the sacral nerves, it is necessary to recur to bathing, and to continue the irrigations with warm water; compression is to be made by means of a cushion, constructed of soft linen and bran, and representing a sort of stopper or plug, at the extremity of which a loop of riband is fixed, which is allowed to hang about an inch beyond the vulva; by this means, the patient herself can withdraw the plug, and introduce another. In one case, the author applied a bandage around the body, with a bag of oat-chaff as a pad to the lower part of the abdomen, in order to depress the uterus and favour the action of the plug introduced into the vagina.

When Professor Recamier discovers any density in the skin, upon which a cancerous ulcer reposes, he cuts out all the diseased part, making the incision in the sound skin, and applies a dry dressing the first day; on the second or third day, he cauterizes deeply, with the concentrated liquid nitrate of mercury.

III. *Excision.*—To the question, whether excision ought to be preferred to cauterization—the author replies, that the greater facility of removing the *whole* apparent disease by the former, and the impossibility of accomplishing this in all cases by the latter, seems at first to decide the question in the affirmative. But when it is ascertained that relapses occur more promptly after excision alone than after cauterization, done either before or after excision, we shall be led to examine this question more closely, in order to determine in what cases one of these means is to be preferred to the other, and where it would be beneficial to combine them.

The author has employed compression and cauterization, before resorting to excision, in five cases; and it is remarkable, he says, that in none of these cases has there been a return of the disease. This combination of compression, cauterization and excision is certainly very painful; but if this method be more sure, it ought to be preferred. The pain of cauterization stimulates, develops the pulse, and produces fever; while the pain of incision contracts the pulse and produces a state of faintish and spasmodic chillness, from which some persons cannot be restored. The pain of tearing in enucleation seems to hold the medium, in its effects on the organic structure, between that of cauterization and that of excision.

The nitrate of mercury, the employment of which is followed by the collapse of engorged lymphatic ganglions, besides its *local* action, having a greater affinity for diseased than for healthy tissues, may have a *general* action resulting from its absorption; for it sometimes produces pytalism. Besides, it is possible, that the pain of cauterization, when it cannot be made use of to destroy the whole tumour, may diminish the susceptibility of the organic structure to a relapse, after the excision of the remainder. Until new observations shall indicate otherwise, the author advises, in circumstances analogous to many of his cases, which he indicates, that excision should be preceded by cauterization.

IV. *Dress*.—The choice of the materials of dress does not appear to be indifferent in the treatment of cancers. The author refers to one of his cases where a derangement in the perspiration of the feet was attended with great inconvenience. There are, he says, habitual perspirations, either local or general, of the groins, the perineum, the armpits, the ears, &c. the suppression of which may produce results more or less troublesome; and besides, there are simple local transpirations, which it is useful to maintain or to recal. This object is obtained by placing upon the part where it is desired to produce transpiration, sometimes wool, sometimes impermeable substances, which keep the part upon which they are applied in a local bath, by retaining upon the surface of the skin the fluid of transpiration. Thus I have, says the author, met with some cases in which the re-establishment of the transpiration of the feet has been followed by the cure of chro-

nic ulcers of the nose, which threatened to become phagedenic; of engorgements of the breast and uterus, and of epigastric tumours with vomiting, &c.

The integuments of the breasts, which in general suffer from the contact of impermeable tissues, bear very well that of rabbit skin and swan skin, of flannel and other substances, which are bad conductors of caloric, and have been employed as topical means upon chronic engorgements of the breasts, sometimes with unexpected advantage. After detailing some cases, the author says, "from these facts, and others which I cannot detail in this place, I conclude that with persons having cancerous affections, or affections susceptible of becoming such, the selection of the materials of dress is not a matter of indifference."

Internal treatment. — Storck and Collin have obtained, at Vienna, undoubted success with the extract of cicuta; while the want of success with it in France has occasioned it to be decried there, although habit still continues it in use. To settle, for himself, this difference in results, from the first years of his practice the author has examined comparatively the *modus operandi* of cicuta, sometimes putting no restraint on the patient's diet, and sometimes restricting them to a very light and severe regimen, and consequently well suited to reduce them. Since 1802 he has known that the effects of cicuta differed very much according to the quantity of aliment he allowed. In cases where cicuta was employed with a nutritious diet, it produced almost no effect upon the different chronic engorgements, while the effect was very evident when a great part of the ordinary aliment was retrenched. Since that time, the author has been collecting a great number of facts relative to the resolution of engorgements of the uterus, the liver, the spleen, the breasts, the testicles and the limbs, by the method here detailed.

Impressed with this difference, he meditated on the advice of Callissen upon the subject of *cura famis*, followed his method, and ascertained that, if cicuta is often not beneficial, it is not because it is an inert remedy, but that, for obtaining all its possible advantages, it is absolutely necessary that its employment should be joined to a very severe regimen.

More recently, with Hallé, he employed cicuta in substance, in the form of extract; and after that he caused extract of

cicuta to be prepared by M. Caventou, by submitting this plant to coction in acetic or alcoholic vapour, before expressing the juice, which is afterwards to be evaporated in a water bath to the consistence of extract. He was led to this new process by reflecting on the superiority of leguminous plants cooked in steam over those cooked in water. This process gives an extract which has none of the strong nauseous odour of the ordinary extract of cicuta, to which it seems to be in no respect inferior as a resolvent, and over which it has invariably the advantage of being always better borne on the stomach, and by which the author has even seen the deranged functions of that organ restored.

Professor Recamier employs cicuta on a starving regimen (*dans le cura famis*) in the following manner:—

1. The patient takes a dose of the extract of cicuta morning and evening, two hours before the first meal, and two hours before the last meal, beginning with half a grain, and increasing gradually to six grains at each dose. He continues this dose from eight to fifteen days, in order to habituate the organs to the remedy; after this he increases the quantity to fifteen grains each time, with which dose he continues two, three or four weeks, because that is large enough to be effective. Callissen did not proceed so far; but our author thinks he has ascertained that, in many cases, it is not necessary to stop at the dose which that author has mentioned.

2. After each dose of cicuta, as well as at meals, Professor Recamier directs to drink, instead of simple water, of a decoction of China root, prepared in the proportion of half an ounce to two pounds of water.

3. He allows only one third of the ordinary quantity of aliment, which is very simple, and divided into three small meals.

4. If cicuta does not answer under one form, he employs it under another, or he substitutes for it the extract of aconitum, prepared with steam, giving it in a smaller dose than that of cicuta.

5. When the China root is disagreeable to patients, he substitutes for it burdock (*arctium lappa*), or spleenwort (*asplenium ceterach*), if there is a disposition to diarrhea; and monk's rhubarb (*rumex patientia*), or soapwort (*saponaria officin.*), if there is constipation. In some cases he employs sarsaparilla, guaiacum, sassafras, &c.

6. With the internal treatment he combines the use of poultices or plasters, as well as general bathing, and prescribes the proper habitation and exercise which seem to him proper to insure success.

7. He watches carefully how patients bear the treatment; for there is a limit in the diminution of aliment, to the dose of cicuta, and a choice in the accessory means; in short, a time for the duration of the treatment, at which it is necessary to stop, in order not to endanger the vital resistance by enfeebling the constitution too much. At the close of the treatment he diminishes gradually the dose of cicuta and the strictness of the regimen.

This treatment was followed rigorously in several cases which he relates, persons who have subsequently enjoyed good health.

Professor Recamier gives the following directions upon the use of certain other therapeutical means.

1. Showering from a watering pot, directed obliquely upon the breasts, has appeared to favour resolution in some cases. He prefers the use of the artificial *Eau de Plombieres*. The bandage must be reapplied immediately after showering.

2. He has employed, upon engorgements of the breasts, cicuta, to which he has added half a drachm of saffron, and from a scruple to half a drachm of hydriodate of potash to the ounce. He protects the nipple against its action by a small disk of agaric. The ointment and bandage are renewed at the same time. He is not confident that this ointment has accelerated the progress of the cure.

3. After the treatment is terminated, especially when the disease has been of long standing, he establishes an issue in the arm or leg. It should not be applied to the arm of the side on which the lymphatic glands of the axilla have been engorged.

4. With issues he has employed mild laxatives, at first once a week, and afterwards at more and more distant intervals.

5. It is his opinion that mineral waters, used in baths, in showering, and internally, would be useful to many persons to favour the action of compression, and to secure the permanence of the success obtained by this means.

The history of almost all mineral waters furnishes examples

of resolution of engorgements of the breast, and he is acquainted with some remarkable ones by the waters of Plombières. Although chronic inflammatory tumours may perhaps have been mistaken for scirrhus tumours, the use of mineral waters being often proper to restore and maintain in its normal state the nutrition of the breasts, the uterus, &c., when they become engorged, this means may contribute to confirm the cure of persons who shall make use of it.

6. The author is afraid to employ arsenical preparations, especially in the neighbourhood of the nose and mouth, and appears to have had little experience with it, but he quotes a case wherein it was used with success externally in the St Louis hospital.

We shall conclude this article by presenting the *general results* of the author's researches upon cancer.

1st. Of the one hundred patients who have come to him to be treated for cancerous affections, sixteen appeared to be entirely incurable. Of the remaining eighty-four, thirty have been completely cured by compression alone: twenty-one, upon whom compression was employed, experienced only an amelioration, but a very notable one: fifteen have had cancers extirpated, either by excision alone, or rather by excision combined with compression: six have had them removed by compression combined with cauterization: in the other twelve cases, the affection was absolutely unyielding.

2d. Some tumours, similar, or at least analogous to those which degenerate into incurable cancers, got well by methodical compression and by some other external and internal means.

3d. When compression has given, during a long time, to mammary engorgements, which have not yet degenerated, an impulsion towards resolution, this continues even after the discontinuance of compression; but if the engorgement has degenerated, and if, after having obtained a great diminution, we leave off compressing the remaining hard and isolated kernel, we must expect the engorgement to regain its former volume, and its degeneration to proceed more rapidly.

4th. Compression may assist in preventing relapses after excision.

5th. The advantages derived from compression upon the

remains of an ulcerated cancer in one of the author's cases, are not obtained in the same degree in some analogous cases.

6th. Resolution of chronic mammitis is very much promoted by compression alone, or associated with local bleeding, &c. &c.

7th. Different uterine engorgements are resolved, by compressing the uterus by means of a pessary made in the form of a hollow cone, and pierced at its extremity.

8th. The os tincæ and the uterus, having become cancerous, may be removed with safety, as long as the disease is circumscribed.

9th. From these results, the author thinks himself allowed to conclude that, if compression be employed early, that is, before the degeneration of the engorgements which are susceptible of it, a great number of them may be resolved; and that the excision of cancers of the breast, so often followed by a relapse, when the tumours are not encysted, will become more and more rare.

Of one hundred cases, two occurred in males and ninety-eight in females: fifty in the left breast; thirty-three in the right breast; three in both breasts; five in the uterus; three in the face; one in the tongue; one in the back; one in the rectum; one in the stomach.

Of the sixty-two patients affected with cancer in the breast, whose histories are contained in Part I. sixteen had received blows on the part; thirty-nine had experienced no local violence; five have had, in their families, persons affected with it; two, who might be supposed to have inherited it, had received blows; twenty-one had axillary engorgements; four had sub-clavicular engorgements; and three had supra-clavicular engorgements.

ART. VII.—NEW YORK PHARMACOPŒIA.

“The Pharmacopœia of the United States of America: by the authority of the General Convention for the Formation of the American Pharmacopœia, held in 1830. Second edition—from the first edition, published in 1820, with additions and corrections. New York, November 1830.”

A book has within a few days come into our hands, purporting, as appears from its title page, to be a second edition of the Pharmacopœia of the United States, “by the authority of the general convention for the *formation* of the American Pharmacopœia, held in 1830.” We had heard of the medical convention which met at Washington for the purpose of *forming* a national Pharmacopœia in the year 1820; and of another which assembled ten years afterwards in the same place for the *revision* of the work put forth by the original convention. Some rumours, moreover, had reached us of a meeting of three or four individuals in New York, claiming authority to revise and republish the Pharmacopœia of the United States; but we were wholly ignorant, till better informed by the title page of the work before us, that any general convention had recently been held in any part of the union with power to originate a work of this kind. But it is possible that the statement in the title page is a mistake in phraseology: and upon consulting the preface of the book, we are inclined to think that this is really the case, though it must be confessed that an error of so grave a character, in the very outset, speaks unfavourably for a work, the usefulness of which must depend so much upon its accuracy. From the preface it does in fact appear, that the body, from which the work proceeds, claims no other right than that of revision and republication; and upon a little consideration it must be evident, that in thus restricting its powers, it has exhibited signal moderation, as there can be no doubt that, upon the same grounds that it has exercised this privilege, it might have made not only a new pharmacopœia, but even new laws for the union.

It may be asked, of whom this convention, possessing such extensive powers, and claiming to represent the whole me-

dical profession of the United States, was composed. As to the number of gentlemen present at the first session, we are left altogether to conjecture. The subject is involved in deep mystery; and every one knows that objects thus shrouded have a tendency to exhibit themselves to the imagination in greatly expanded dimensions. Perhaps we may be under this exaggerating influence when we state our impression, that probably four individuals were present, of whom three had a right to a seat in the general convention at Washington, had they been disposed to proceed thither at the time appointed. We confess, however, that we do not advance this opinion with confidence; for we have no positive evidence of the presence of more than two gentlemen, one of whom acted as president, and the other as secretary;—and the president, we are moreover constrained to allow, had no more right to a seat in the convention, at least as a representative of any body of physicians, than any other medical man on this side of the Atlantic. With that extraordinary degree of diffidence which has characterized all their proceedings, the convention concluded, that in their present condition, they could not fairly be considered as representing more than one-half of the United States, including New England, New York, New Jersey, Pennsylvania, Delaware, Maryland, and the District of Columbia. To give, therefore, an undoubted sanction to their authority, they adjourned for five months, directing that in the mean time circulars should “be sent to each of the medical societies and medical institutions in the United States,” without the limits above mentioned, requesting the appointment of a delegate to co-operate with the convention at its next session. This took place at the time appointed; and a gentleman from Cincinnati, and another from Charleston, S. C. appeared and took their seats. We are not told, however, that they appeared as delegates; and have reason to believe that the profession in Charleston at least, did not consider itself represented at New York when the convention assembled. With these recruits, and with the addition of several volunteers, the convention became sensible of its strength, and proceeded at once *in medias res*. It consisted, besides the two gentlemen from the south and west, of two from Yale College, one from the Berkshire medical institution, and five resident

physicians of the city of New York, which was thus very fairly balanced against the union. In the mean time, the great majority of the states, among which our own was not the least, were resting in utter ignorance of these proceedings; several of them in fact considering themselves represented in the medical convention which was held at Washington.

The work before us is the offspring of the New York convention; and would appear to partake in no little degree of the unpresuming character of its parent. This at least might be inferred, from the mode of its entrance among us. No formal proclamation in the public papers preceded its arrival; no laudatory paragraphs set forth its origin and merits; it came within our walls in the same modest silence and secrecy which had presided over its birth; and it had been some time in the midst of us without having been discovered even by the booksellers. It first showed itself cautiously to the apothecaries, going about from shop to shop, and offering its merits humbly to their attention. But people are too blind to the worth which is not ostentatiously displayed; and so it happened in the present instance. We are apt to attach an idea of meanness to humility: and the conviction no doubt very unjustly arose in the minds of those who came to hear of the new Pharmacopœia, that the object in this shrinking avoidance of general notice, was to enable it to insinuate itself into the possession of those who were expecting a work of the kind, and might not readily distinguish between the spurious and genuine. This unfortunate impression, or some other cause, has prevented the sale of the book: and, it is to be feared, that unless its merits are more loudly proclaimed, it may leave us with the same secrecy that attended its arrival. We propose, therefore, as fully as our limits will allow, to present an account of its contents:—and, should faults as well as excellencies be discovered, we cannot, as faithful reviewers, shrink from the duty of pointing them out to our readers.

We have hitherto proceeded no further than the preface. Before leaving it we will make a single quotation, from which our readers will, no doubt, draw inferences favourable to the character of the work.

“Without going into any detailed specifications on the subject,” say the gentlemen of the convention, “it is proper to

state, that while no unnecessary changes have been introduced, every endeavour has been made to render the present condition of the Pharmacopœia worthy of the profession in this country, and of the present advanced state of medical knowledge." Should it appear, therefore, that there are deficiencies in the work, the result must be attributed rather to the misfortune than the fault of the compilers; as we are bound to believe that they have exerted themselves to the extent of their knowledge and capacity.

One of the first circumstances that engaged our attention in its perusal, was the change which has been made in the arrangement of the catalogue of the materia medica. One of the characteristics of the Pharmacopœia of the United States, is a division of medicines into those strictly officinal—that is, such as are either employed in pharmaceutic processes, or are generally recognized as important therapeutical agents; and into those which, though employed by a few practitioners, or in certain districts of country, and probably in many instances possessed of valuable properties, have not yet received the sanction of general approval. We have always considered this arrangement as exceedingly convenient, allowing the retention of remedies which might otherwise be deemed by the majority cumbersome to the materia medica, and at the same time presenting them in a manner to indicate their relative standing. We confess, therefore, that we cannot but consider the rejection of a secondary list, as at best "an unnecessary change," in consequence of which, at least seventeen remedies, occasionally employed, have been wholly omitted, as unworthy a place in the materia medica.

Another change, which struck us even more forcibly, is that of the nomenclature. One of the strongest recommendations of the United States Pharmacopœia, in our eyes, and one which goes far to counterbalance numerous defects, the natural consequence of haste in its formation, is the simplicity of nomenclature which it introduced. This is, perhaps, its prominent characteristic, and honourably distinguishes it from all other works of the kind. One expressive title is, whenever possible, given to each medicine, derived either from common usage or the scientific name of the plant or animal from which the medicine is procured. Thus we have *aloe* instead of *aloes extractum*

—*cinchona* instead of *cinchonæ cortex*—*assaftida* instead of *assaftidæ gummi-resina*—*petroselinum* instead of *apii petroselini radix*. All this, however, is changed; and the old cumbersome nomenclature has been restored, without any merit, that we can discover, to recommend it. We are told that the names in the first column are those considered strictly officinal, and we have a right to suppose that they will be employed in all parts of the work in which there is occasion to mention the medicines they respectively designate. Thus, *anthemidis flores*, *assaftidæ gummi-resina*, *colocynthis pulpa*, *ipecacuanhæ radix*, *lini usitatissimi semina*, &c. &c. being placed as officinal titles in the list of the materia medica, should be retained whenever afterwards in the pharmaceutic processes there is occasion to refer to them. Any other plan would be attended with almost inextricable confusion; and yet the editors of the New York Pharmacopœia have paid the high compliment to the reader's understanding to suppose that he would require no such uniformity of nomenclature to assist him in ascertaining their intentions on all occasions. In the great majority of their formulæ they have left the former names unaltered, trusting to the reader's sagacity for the discovery of their meaning, as he would in vain look for it in any part of the work itself. Let us cite a few examples. Their officinal title for foxglove is *digitalis folia et semina*. In the infusion of foxglove, they direct simply *digitalis*, copying in this respect the United States Pharmacopœia. Do they mean the leaves, or the seeds, or the whole plant? The last is the necessary inference from the language, though the knowledge of the reader, which is trusted to on the occasion, would probably lead him to the correct conclusion. In the United States Pharmacopœia, *digitalis* is the proper officinal title, and is defined in the materia medica to signify the leaves of the plant. *Anthemidis flores* is their name for chamomile, but in their infusion of chamomile, they direct *anthesis*, in other words, the whole plant. They use *colocynthis pulpa* to express the medullary portion of the fruit of the bitter cucumber; and yet in their directions for the compound extract of colocynth, they make use of the simple term *colocynthis*, thus ordering the whole plant, or at least the fruit as it is kept in the shops, containing seeds as well as medullary matter;

while it is well known that the latter part only should be used. We might proceed multiplying instances through a space as extensive as the Pharmacopœia itself; for this discordance of nomenclature pervades the work, and may indeed be said to give it a distinctive character. We were inclined to attribute it to a disposition on the part of the compilers to exercise the reader's judgment, and thus to confer that sort of pleasure which we are told by rhetoricians accompanies the discovery of an author's meaning when not clearly expressed: but we find that they have here and there made an alteration in accordance with the new nomenclature; and we are compelled to conclude that the general result was accidental, not according to any system, and that, like Homer, they sometimes slept. If the naps were somewhat more frequent than those of the Grecian bard, it must be recollected in their favour that they were engaged in a much less animating task. Our readers, we think, are prepared to admit, that the substitution of the old nomenclature for the new, is a second "unnecessary change."

But other changes have been introduced, and we do not yet despair of finding something to approve. We are still engaged in the catalogue of the *materia medica*; for it is in this that the convention appears to have put forth its strength: and it would be an ill compliment to pass with a brief notice, what, both from the style in which it has been printed, and the marks of labour evident in its construction, may be considered as decidedly the favourite. We find upon a comparison of the New York and United States Pharmacopœias, that though in the former the scientific names of the plants and animals from which the medicines respectively proceed are retained, the authorities for these names, which found a place in the latter, are neglected. The London college, and the framers of the Parisian Codex, deemed it necessary to refer to authority; and the convention at Washington in 1820 thought proper to follow their example. Now, though few can be disposed to appreciate more highly the standing and character of the New York convention than ourselves, we confess, that in a matter of natural history, we should have more confidence in the authority of Linnæus, Willdenow, Gmelin, De Candolle, &c. than in theirs; and should prefer a reference to some

standard author wherein the scientific name of a plant or animal is given. We fear that we shall have to admit that this is a third "unnecessary change."

Another peculiarity is the introduction, under each official name in the materia medica, of a very brief account of the properties of the medicine. Such descriptions, in a work of this character, are necessarily very imperfect, and can convey no accurate idea of the substance described. They belong properly to a dispensatory, or a treatise on the materia medica, in which space is allowed for full and accurate details. Besides, there is room for much difference of opinion as to the sensible or medicinal properties of drugs; and in a work which, like a Pharmacopœia, is intended to be a standard for general adoption, there should be as little as possible to conflict with the prevailing sentiment, or even with that of individual practitioners. We know of no national Pharmacopœia in which a description of the medicine constitutes an essential part of the work; and do not think that the innovation in the present instance is a happy one. Is it not beneath the dignity of a great medical convention to inform us that the rose is fragrant and garlic fetid,—that sugar is sweet and vinegar sour,—that jalap purges and ipecacuanha vomits? The dose too is mentioned. How unsatisfactory is necessarily any information of this kind, unless accompanied with an accurate account of the circumstances under which the remedy is administered; for the amount of the dose varies exceedingly with the state of the disease, and the object for which it is prescribed. Nor is there any good reason why these descriptions, if adopted at all, should not be extended to the pharmaceutic preparations, a knowledge of which, both as regards their properties and doses, is quite as important as a similar acquaintance with the simples, or the chemicals not prepared by the apothecary. Why, for example, should we have the properties of Prussian blue described, and not those of the hydrocyanic acid obtained from it? Why the properties of metallic antimony and mercury, and not those of tartar emetic, calomel, and corrosive sublimate? And yet this anomaly is presented in the New York Pharmacopœia. It gives us descriptions, brief indeed, and unsatisfactory, of all the substances contained in the catalogue of the materia medica, but

not of one preparation. The fact is, that the system is altogether erroneous, and we do not think the convention thus far more fortunate in their additions than their alterations.

The changes which we have hitherto noticed, have been of a general character, and have not been such as we could approve. Perhaps, when we come to examine the individual articles, we shall find evidences of greater judgment and accuracy; and it gives us pleasure to state, that in a few cases there has been some improvement upon the United States Pharmacopœia of 1820. Thus columbo is referred to the *cocculus palmatus*—galls to the *quercus infectoria*, and kino to the *pterocarpus erinacea*;—the prussiate of iron is defined to be a ferro-cyanate—the supertartrate of potassa a bi-tartrate—the subcarbonate of lead a carbonate—the muriate of soda a chloride of sodium, and the sub-carbonates of potassa and soda, carbonates: the *rosa gallica*, *krameria*, *taraxacum*, and *tiglii oleum* have been introduced, and a few others of less importance. There may be other improvements in the materia medica which have escaped our notice, but the number cannot be great. Let us now take a glance at those alterations which cannot properly be brought under the title of improvements.

In perusing the catalogue we were struck with the fact that the specific gravity of the mineral acids is not indicated. It is true that the strength of the muriatic and nitric acids is pointed out by the quantity of carbonate of lime which they are capable of decomposing; but the apothecary will find it very troublesome to apply this test of the strength of any acid he may purchase; and besides, its indications would often be inaccurate, owing to the impurity of the carbonate of lime with which he would operate. The sp. gr. may be considered a certain indication of strength, and is always very readily ascertained with at least a sufficient approach to accuracy. Our readers need not be informed that the success of numerous pharmaceutic processes depends on the due strength of the acid employed. The strength of sulphuric acid is not stated in any manner, either by its sp. gr., or by the quantity of any salt which it will decompose; and yet, from its great affinity for water, which it attracts rapidly from the air, this acid is very liable to vary in strength.

Neither is the sp. gr. of alcohol given. In the column of
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official titles we have simply "alcohol," and in the explanatory column, "alcohol officinale." Now its position in the first column constitutes it official, and we are left altogether to guess what is the strength intended. By this single neglect several processes are vitiated, as the proportion of the ingredients has been calculated for alcohol of a particular specific gravity, and the result must vary with any variation in this respect. It cannot be absolute alcohol that is here intended, though such is the import of the terms; for the cost of this would be such as to render it wholly unattainable for the ordinary purposes to which this fluid is applied.

Aloes is called "extract of socotrine aloes," or "extract of hepatic aloes." We are at a loss to discover the meaning of these terms. Aloes is an extract from the plant, and therefore we might with propriety say, extract of the socotrine aloe, &c.;—but from the terms employed in the New York Pharmacopœia, we are left to infer that the drug is an extract of the drug itself. The mistake probably arose from an incorrect translation of the Latin title—"aloes spicatæ extractum," which means extract of the spiked, or as some improperly call it, the socotrine aloe. We much prefer the simple term *aloes*, employed by the United States Pharmacopœia.

Alum is incorrectly stated to be a bisulphate of alumina and potassa. Some chemists consider it a compound of sulphate of alumina and bisulphate of potassa, others of sulphate of alumina and sulphate of potassa;—but none, that we are aware of, a bisulphate of the two bases.

Distilled water is directed in the catalogue of materia medica, and a process is afterwards given for its preparation.

We have the old references of bark to the different species—*Cinchona cordifolia*, *c. lancifolia*, and *c. oblongifolia*—now well known to be incorrect. The yellow bark which yields quinia is universally admitted by the best botanists not to be derived from the *c. cordifolia*, and recent investigations in France and Germany have proved that our best red bark is not produced by the *c. oblongifolia*.

"*Elaterii pepones*," the fruit of elaterium, is given as the official title of the medicine derived from the *momordica elaterium*. Wild or squirting cucumber is given as the En-

glish title, and no other explanation is afforded. We are left then to infer that the fruit of elaterium is the part used in medicine; and in the account of its properties below, we are told that it is a violent drastic cathartic in the dose of half a grain or a grain. Elaterium should at this rate come much cheaper than we find it in the shops. Certainly the convention was napping when this article was presented to their notice. The proper title is given in the United States Pharmacopœia, viz. simply, elaterium. Notwithstanding their objection to "unnecessary changes," they have substituted the fruit for the peculiar substance deposited by its juice, copying the London Pharmacopœia, without considering that the fruit is there directed with the view of preparing the extract from it; the wild cucumber being cultivated in that country. If they introduced the fruit as officinal with a similar view, they forgot their intentions very speedily, for no extract is directed to be prepared from it; nor in fact is the plant cultivated in the United States.

Guaiacum is still called a resin, notwithstanding the unanimous determination of chemists that it is a peculiar proximate principle.

The plant which yields by far the largest proportion of *kino* at present employed is not referred to; we allude to the *nauclea gambir*.

Opium is said to owe its active properties to two *alkaline* principles, *morphia* and *narcotine*. We were not before aware that narcotine was an alkali.

The convention do not agree with botanists in considering the *pipsissewa* a species of *chimaphilla*; they still denominate it *pyrola umbellata*.

"*Sapo albus*—white soap," is directed without reference to its composition or character, except as regards colour. The kind of soap usually called white soap, or common white soap, is made with animal oil; the castile or olive oil soap may be white or otherwise. Which do the convention mean?

The bark of *sassafras* is said to be the officinal portion. In this part of the United States we always use the bark of the root.

The sub-borate of soda is called a borate in the explanatory column. It is admitted by chemists to be a bi-borate.

The *spigelia marilandica* is called Carolina bark; but we suppose this to be an error of inadvertence.

The inner bark of the slippery elm is said to be inodorous: we have always found it to possess a decided and agreeable odour; but such things go by numbers, and the convention has the majority against us.

We might thus proceed extending the list of mistakes and oversights much further than our readers would have patience to follow us. We will merely observe further, with regard to the catalogue of *materia medica*, that due care has not been taken to preserve consistency in the plan adopted. Thus the dose of the medicine is sometimes mentioned, sometimes omitted; and the part of the plant, though generally, is not always expressed.

We take leave for the present of the *materia medica*, and proceed to the preparations, where we hope to meet with ample compensation, in frequent occasions of approval, for the violence done to our feelings by finding ourselves in opposition to the New York convention. But before entering upon this expected gratification, there is one little difficulty which we should much like to have removed. In the description of the officinal weights and measures which intervenes between the *materia medica* and preparations, we find one sentence, or portion of a sentence, which has been dovetailed into the original, and which has perplexed us not a little. We present it to our readers in the hope that they may be more fortunate than ourselves in fathoming the depth of it. "Ad quantitatem liquidorum indicandam mensuris utimur ex congio vinario deductis," says the United States Pharmacopœia: "nisi in paucis exemplis acidorum mineralium, et hydrargyri, ubi mensuris pondere utamur;" adds the New York convention. Now we are puzzled to know what is meant by "ubi mensuris pondere utamur," and moreover, why the last word should be in the subjunctive mood. But perhaps we may find some assistance in the English translation. "To express the quantity of liquids, we employ the measures which are derived from the wine gallon, *except in a few instances of the mineral acids and mercury, where measures by weight are used.*" Measures by weight are used!—but it is useless to perplex ourselves any longer; we give the matter up. It is mortifying to

be compelled to acknowledge that others can think more deeply than ourselves; but we have the consolation that it was a whole convention, and not a single individual, that has thus surpassed us.

In the plan of the second and most important part of the work, we do not find that any great variations have been made from that of the United States Pharmacopœia. The most striking, is the introduction of the Latin and English, side by side, upon the same page. Though the print is thus rendered much smaller, and requires a pretty close approximation of the eye to be perfectly legible, and though the page is made to have a crowded and sometimes awkward appearance, the arrangement has this great advantage, that if the reader happen to stumble first upon the Latin, he has an admirable auxiliary close at hand to assist him in solving difficulties arising from a species of construction which he has not met with in the pages of Cicero, or the more analogous work of Celsus.

Another variation is the extension occasionally given to the explanatory notices which precede the several sets of preparations. Opportunity is thus afforded for the introduction of various edifying particulars, which, though contained in every elementary treatise on pharmacy, cannot be too frequently impressed on the attention of those who are very backward in their learning. The convention, very naturally concluding that such information was calculated only for beginners, and must be familiar to those who had dipped very deeply into the classics, did not deem it advisable to clothe these little prefaces in the Latin language. By this conclusion they gained a double advantage: first, they saved all the trouble and time which a translation from the English would have cost; and secondly, they were enabled to crown their double column of fine print with a capitol in larger letters, extending across the page, and thus giving a finished appearance to the work.

We find no other variations in the general plan of this part of the Pharmacopœia worthy of particular notice; and thus far derive much pleasure from the realization of our anticipations of accordance with the views of the convention.

We have observed that the Latinity of the United States Pharmacopœia has seldom been tampered with. Taken, as

the Latin processes originally were, with some slight alterations from the London, Edinburgh, and Dublin Pharmacopœias, and perhaps from the French Codex, and expressed in a style as various as the sources from which they were derived, they present a fascinating diversity of phraseology which few would wish to see reduced to uniformity, if they themselves were compelled to bear the labour and drudgery of the reduction. Still, it must be admitted, that a great national work, like the Pharmacopœia, should have a distinctive character of its own, and not appear, on the face of it, to be made up of patches and shreds of different shapes and colours, huddled together from all quarters, and held in connexion only by external force, not by any inherent affinity among themselves.

The convention, however, did not consider the adoption of one uniform style of Latinity, instead of the different styles comprised in the United States Pharmacopœia, as among the *necessary changes*. We therefore find in the book which has proceeded from the New York press, the same character of diversity, or perhaps we should rather say, the same want of any distinctive character whatever, as regards the Latinity, which exhibits itself in almost every page of our national standard work on pharmacy.

Another circumstance which attracted our notice, was the evident indisposition of the convention to interfere with the more complex processes, which required much time and labour to be properly understood and appreciated, and still more to be duly corrected. Before attempting any material alteration in these processes, it was necessary to examine every step with the most sedulous care; to consult numerous authorities; to make frequently tedious if not difficult calculations; and after having arranged them satisfactorily, so far as mere theoretical investigation was concerned, to submit them to the test of actual experiment. But it must be allowed that this drudgery was beneath the dignity of the convention; and the consequence is, that some of the most objectionable processes of the United States Pharmacopœia have remained unaltered. A few of these we shall notice.

The process for "acetum opii" is preserved in all its original disregard of scientific rule or definite action. It is hardly necessary to state that in no two instances would a me-

dicine of the same strength result from the directions given in this process.

The purification of vinegar by charcoal, as directed in the process for "*acetum purificatum*," has been proved by repeated trial to be wholly impracticable to any useful extent. Yet not only are the directions retained, but the vinegar thus purified is ordered in several of the subsequent or preceding formulæ, as in those for vinegar of squill and acetate of potassa, in the latter of which it is particularly objectionable. Vinegar may be freed from colour by the action of *animal charcoal*; but even in this way it is not completely purified, and the distilled vinegar is on every account greatly preferable.

As in the United States Pharmacopœia, carbonic acid is placed as a distinct officinal preparation, and is directed to be procured by the action of the sulphuric acid on carbonate of lime; but we are not told how it is to be preserved, and take it for granted that it is to be allowed to mingle with the air of the shop.

The old process of Scheele for Prussic or hydrocyanic acid is retained. This is universally admitted to yield an uncertain product, owing to the variable quantity of ferro-cyanate of iron in the Prussian blue. The French have entirely abandoned it. Either Guy Lussac's or Vauquelin's method is decidedly preferable.

We are somewhat surprised that the process for "*hydro-sulphuret of ammonia*" was allowed to escape the censure of the convention. Every tyro in chemistry knows, or might know by consulting the work of Turner, which is in every body's hands, that to procure sulphuretted hydrogen from sulphuret of antimony, it is customary to employ strong muriatic acid with heat. In the process before us the muriatic acid is very much diluted with water, and the application of heat is not directed: and we will venture to assert, that the hydro-sulphuret of ammonia will never be obtained by pursuing the directions given in the United States and New York Pharmacopœias.

The process for phosphate of iron remains without improvement. The very great disproportion of water, and the inaccurate proportion of the saline ingredients are its chief faults.

The aromatic syrup of rhubarb, with its waste of cloves and cinnamon, with its two nutmegs, and the altogether injudicious mode of its preparation, is retained unaltered.

The syrups of sarsaparilla have received no improvement in accordance with our improved knowledge in relation to the pharmaceutic management of this valuable medicine.

In the process for preparing crystallized acetate of zinc, the quantities of the ingredients directed are, one drachm of sulphate of zinc, four scruples of acetate of lead, and twenty fluid ounces of water: so that to obtain less than a teaspoonful of crystals, it would be necessary to evaporate a pint and a quarter of the solution. This is in fact the process of the Edinburgh Pharmacopœia for preparing the "solution of acetate of zinc," and was hastily copied by the framers of the United States Pharmacopœia, without due consideration of the different purpose to which they intended to apply it. The convention of New York has not deemed an amendment of the process among the *necessary changes*.

They have also allowed the formula for sulphate of potassa to pass inspection without any mark of disapprobation, though the first line of it contains an obvious blunder. "Take," say the United States and New York Pharmacopœias, "of the salt which remains after the distillation of the nitric acid, two pounds:" but what that salt is, or how it may be obtained, is not mentioned; as no process is given for the preparation of nitric acid.

Numerous other instances of unaltered formulæ might be mentioned, in which very considerable modifications would be necessary in order to render the Pharmacopœia worthy "of the profession in this country, and of the present advanced state of medical science:" but if we proceed much further, with our regrets for what has been left undone, we shall not have space to render justice to the gentlemen of the convention for what they have really accomplished.

And here we rejoice to be able to commend, without putting any force upon our conscience. The omission of several useless formulæ convinces us that some degree of judgment and industry was exercised; and we are determined not to listen to that captiousness of spirit which would whisper in our ear that it is an easier task to destroy than to amend; for

we really do believe that many of the processes omitted were not worthy of amendment. Such, for example, are several preparations of antimony, all the collyria, and a few of the infusions, pills, and tinctures. About the propriety of certain other omissions, there is room for doubt. Some of the profession might be disposed to retain the *acetate of iron*, the *iron plaster*, the *liniment of cantharides*, the *tinctures of aloes*, *columbo*, *quassia*, and *serpentaria*, the *ointment of rose-water*, the *wine of aloes*, and the *compound wine of gentian*, all of which have been erased. One of the rejected preparations we ourselves could have desired to see retained; but as the present condition of the process is imperfect, and some labour might have been required to correct it, we cannot bring ourselves to complain of the course adopted:—we allude to the *emplastrum plumbi subcarbonatis compositum* of the United States Pharmacopœia, commonly known, and much used in this place under the title of Mahy's plaster.

We have spoken of what has been omitted; let us now turn our attention to the alterations. Of some of these, taken chiefly from the London Pharmacopœia, we highly approve, though it must be admitted, that they have occasionally suffered in the passage. Thus, in the *acetum scillæ*, the proportion of squill to the menstruum is adopted, but the quantity of alcohol doubled, in consequence of the substitution, probably unintentional, of undiluted alcohol for the proof spirits of the London Pharmacopœia. In the *emplastrum ammoniaci*, purified ammoniac is directed in accordance with the London College, but we are not informed how the purification may be effected. But it is in their own emendations that the genius of the authors of the New York Pharmacopœia is most conspicuous. We will follow them through a portion of their course.

In the process for *liquor arsenicalis* they order in the recipe certain quantities of arsenious acid, sub-carbonate of potassa, distilled water, and alcohol, direct them all to be boiled together, and the alcohol then to be added. We cannot readily conceive how this fluid is to be extracted from the mixture, or why it should have been originally boiled with the other ingredients.

For soap cerate they direct "hard soap" instead of "white

soap," which is the only kind recognized as officinal in their materia medica catalogue.

Their processes for *simple cerate* and *simple ointment* are precisely the same as regards every thing but the form of expression. Both are directed to be made of four ounces of wax and four fluid ounces of olive oil. They would have avoided this mistake by adhering to the United States Pharmacopœia.

They tell us that "plasters are adhesive, solid, compound substances, *spread upon leather, linen, or silk.*" We were not before aware that this last condition was necessary to the constitution of a plaster.

The *infusion of chamomile* of the United States Pharmacopœia is made with *cold* water, and the maceration is continued eight hours. They retain the cold water, and shorten the maceration to half an hour. Would the virtues of the flowers be extracted in so short a time?

In the *liniment of soap and opium*, they direct opium to be digested with the soap in the spirit of rosemary; but they fix no length of time for the digestion, nor do they order the resulting tincture to be filtered.

In the directions for preparing the distilled oils they employ only the English language, and in return for the compliment, consider themselves authorized to do it no little violence. "The substance from which the oil is to be obtained, is introduced into a retort or common still, and as much water poured on as will cover it; *then distil* into a large refrigeratory." The gentlemen pass too abruptly from the indicative to the imperative. One does not like to be taken thus unawares by a command.

In the preparation of *pills of compound extract of colocynth* we are told to take the extract, without any addition, and beat it into a mass. Is it not in a mass already?

Pills of calomel are ordered to be made with Dover's powder, in the proportion of three parts of the powder to one of calomel. These might be called compound calomel pills, but we know not on what authority they can claim the title by which they are designated. No pills are directed with calomel as their only active ingredient.

The *acetate of lead* is ordered to be made by the action of

“strong acetic acid” upon the sub-carbonate; but the “strong acetic acid” of the New York Pharmacopœia is made by distilling a mixture of sulphate of iron and *acetate of lead*. This plan of acting in a circle, in the preparation of official compounds, has at least the merit of novelty to recommend it.

The alcoholic solution of camphor is taken from the tinctures and placed among the spirits. Why this, rather than the alcoholic solutions of muriate of iron, of iodine, of the oil of peppermint, &c.?

In the process for the *milder ointment of nitrate of mercury*, we are told in the Latin language to use triple the quantity of *lard and of oil* employed in the preparation of the stronger ointment; in the English, to use three times the quantity of *lard*. Which are we to obey?

In the *ointment of the impure oxide of zinc*, we are directed to use the “prepared impure oxide,” but are furnished with no process for its preparation.

The *wine of colchicum* is made with two ounces of the *fresh bulb* to a pint of wine. We were not aware that the recent bulb was to be had in this country, and if it were imported, it would not arrive in a state fit for use. The proportion, moreover, of colchicum is much too small. We venture to predict that little good or harm will be done by the wine prepared according to this process. We prefer greatly the proportion ordered in the United States Pharmacopœia, viz. one part of the bulb to two of wine. A saturated solution is on every account desirable. Wine prepared in this manner in our city has been found highly efficacious, while that imported from England, or made according to the direction of the London Pharmacopœia, has often proved nearly inert.

We now come to the additions. It is pleasing to observe how sedulously the convention has avoided the more complex processes, which require much trouble or great care in their arrangement. Like careful navigators they keep at a respectful distance from rocks and breakers, and land only when they arrive at some green and sunny island, surrounded with smooth water, where their bark may ride in safety, while they sport and gambol upon the shore. The chemical preparations present a dark and forbidding aspect; and though treasures may be hidden within their bosoms, the approach is sometimes difficult and hazardous to those not well versed in its intricacies.

But the infusions, and mixtures, and pills, and tinctures:—what an ample and delightful field do they afford for those fond of novelties to expatiate in. It is here that the convention luxuriates in all the pleasing consciousness of knowledge and inventive power. It is here that they pour forth of the fulness of their pharmaceutic wealth, and gladden the reader, as well by their own obvious pleasure in giving, as by the feast of novelties which they spread before him. But it is time that we impart a view of these treasures to our readers, and share with them the enjoyment which we have received.

Strong acetic acid is the only chemical preparation for which a process has been introduced, except a few copied from the London Pharmacopœia. We have before stated that this process consists in distilling a mixture of sulphate of iron and acetate of lead. We do not know from what source precisely it was derived. Dr Ure speaks of it; but directs very different proportions from those recommended in the New York Pharmacopœia. He considers it one of the cheapest, though not the best, probably because it affords an impure result.

The original preparations, or those which appear so to us, are *tobacco plaster*, *extracts of sanguinaria*, and of *spiræa tomentosa* (spelled *spirea*); *infusion of sanguinaria*; *liniment of iodine*; *mixtures of morphia*, *quinia*, and *croton oil*; *pills of nitrate of silver*, of *iodine*, of *lupuline*, of *morphia*, of *piperine*, of *sulphate of quinia*, of *squill* and *calomel*, of *strychnia*, of *croton oil*, and *compound pills of guaiacum*; *syrup of quinia*; *tinctures of iodine*, *lupuline*, *croton oil*, and *acetated tincture of opium*; and *ointments of tartar emetic*, and *iodine*.

Now with regard to these preparations, though we have a mixture and pills of morphia, which might be made quite as readily by extemporaneous prescription, we have no process for preparing morphia, or its salts, which would be somewhat more difficult to elaborate; nor is any mention made of these medicines in the catalogue of the *materia medica*. In the mixture of sulphate of morphia, sulphuric acid is added, we know not for what other reason than because acetic acid is requisite to promote the solution of the acetate. The sulphate itself is readily and perfectly soluble.

Pills of piperine, of strychnia, and of sulphate of quinia,

and syrup of quinia, are directed; but no process is given for preparing piperine, strychnia, quinia, or the sulphate of quinia; nor do we find either of these substances included in the list of the *materia medica*. In the syrup of quinia, two pints of simple syrup and sixty-four grains of sulphate of quinia are ordered, with no other ingredient. We are much deceived if the syrup would retain the salt in perfect suspension. A little sulphuric acid might have been well spared from the mixture of sulphate of morphia and introduced here.

We had nearly overlooked one new process, which, from its beautiful simplicity, we are tempted to present to our readers exactly as we find it in the *Pharmacopœia*.

“*Emplastrum galbani.*

R. Galbani quantum vis.”

What a most striking example of the laconic style. A Spartan would have envied the convention the honour of originating this process.

We will briefly enumerate the processes extracted from the *London Pharmacopœia*, at the same time stating our serious conviction that this is decidedly the best part of the work accomplished by the *New York convention*. The *acetum colchici* is introduced, and we have no other objection to the process than the direction of *fresh* colchicum bulb, which, though proper in England, is not so in this country. The *liquor aluminis compositus* is defective only in the omission of the proportion of water in which the salts are to be dissolved; the recipe, in fact, as contained in the *New York Pharmacopœia*, making mention of no menstruum whatever. The *decoction*, and *extract*, and *syrup of poppy* are well enough, though we cannot see the necessity for them; and no capsules of poppy, from which they are prepared, are directed in the *materia medica*. The *plaster of ammoniac with mercury*, and the *compound galbanum plaster* are very good preparations; but purified ammoniac and galbanum are directed, and we are not told how to purify them. Of the *plaster of opium*, and *extract of dandelion*, we cordially approve. The last *London process* for calomel, which has been introduced, is preferable to the former; though we could have wished the convention, in copying the *Latinity*, to have paid some attention to the difference in gender between the *London names* of the salts, and theirs; and we can discover no necessity for saying four pounds of mercury by weight, as

we are not aware that the substantive *pound* is used in pharmacy to express any thing else than weight. *Mercury with chalk* is also a good preparation; but the convention should have remembered, in copying the formula, that their name for chalk is *calcis carbonas*, not *creta*. When to the above list we have added the *honey of borax*, the *mixture of assafœtida*, the *mucilages*, of *starch* and *gum arabic*, the *compound pills of gamboge*, and of *iron, sulphurated oil*, and *oxide of zinc*, we have completed the catalogue of preparations taken from the London Pharmacopœia. If to these our readers add *liquorice lozenges*, and *gum lozenges*, extracted from the Edinburgh Pharmacopœia, they will have had presented to them an account of all, or nearly all, the matter that the New York Pharmacopœia contains to distinguish it from that of the United States.

But we despair of being able to convey to them an idea of that peculiarity of manner in which the work is executed, and which gives it a character quite unique. One of the prominent features of this character is a want of uniformity in the modes of expression; a constantly recurring diversity in the names of medicines, and a total disregard of congruity, which impart to the work an air of picturesque wildness, very engaging to those who are enamoured of variety. Thus, *acetum* is their officinal title for vinegar; but when about to be submitted to distillation, or to purification by charcoal, it takes the name of *acidum aceticum impurum*; after distillation it is called *acidum aceticum dilutum*; and after boiling with charcoal, returns back to *acetum purificatum*. In one place, (p. 70), the strong acetic acid is called *acidum aceticum forte*, in another, (p. 127), *acidum aceticum fortius*. *Liquor calcis* has been adopted from the London Pharmacopœia as the name of lime-water; but as if the convention had a lingering attachment for the old name, we find *aqua calcis* recurring in the processes; as in that for *oleum æthereum*, and *hydrargyri oxid. cinereum*. *Calcis carbonas* is their officinal title for carbonate of lime in any form; but we find it among the preparations taking the style sometimes of *calcis carbonas mollis*, sometimes of *creta*, and sometimes retaining the original name. Goulard's extract they call at one time *solution of subacetate of lead*, at another, in the same page, (p. 84), and in the same formula, *liquid subacetate of lead*. In one place they carefully change the name *aurantiî cortex*,

of the United States Pharmacopœia, to *aurantiorum cortex*; but in many other places retain the original unaltered. Pennyroyal is called *hedeoma* in the materia medica; *cunila*, among the preparations (see p. 118). Gaultheria is named *partridge berry* and *mountain tea*, in the materia medica; but when its oil is to be extracted, it is transformed into *winter green*. *Uvæ passæ* is the officinal title adopted for raisins; but in the compound decoction of barley, *uvæ*, grapes, are unintentionally directed. *Emplastrum tabaci* is translated *snuff plaster*, though we have nowhere else in the work heard of snuff as an officinal name. But why do we go on multiplying these instances, as if we might soon come to the end of the list? We assure the reader that throughout the whole work this incongruity prevails; and sometimes many processes occur in succession, in which the title which they gave as officinal in the materia medica is not once employed. This want of uniformity results from very unnecessary changes made in the officinal titles, without due care to follow up these supposed corrections. They seemed to think that if the leading sheep of the flock could be made to jump over the fence, all the others would follow as a necessary consequence, without any further trouble on their part.

We find the same variety in the Latinity as in the names of the remedies; and errors have very frequently crept in, which we should not like to attribute to any other cause than oversight. Even the English is not free from occasional errors in spelling and grammar:—and the press seems to have wanted in mistakes. But we have not room to particularize these comparatively venial faults; and our readers are no doubt tired of the subject. If they have not found those excellencies in the work which they might have anticipated, we wish to assure them that it is owing to no fault of ours. It was natural for us, as well as them, to expect something useful, if not extraordinary, from a convention which claimed the virtual representation of the twenty-four United States;—and these expectations were at first confirmed by the assertion in the preface, that every endeavour had been made to render the Pharmacopœia “worthy of the profession in this country, and of the present advanced state of medical science.” We confess honestly, that we have been disappointed. So far, however, as regards the operation of the work within the United States, we are under no apprehension of injurious re-

sults. Being in fact altogether local in its origin, it is not likely to be received by the profession generally as a pharmaceutical standard work; and we are much deceived, if even at the very doors of the convention it is not the subject of a smile;—for our opinion of the general intelligence of the medical profession in New York is too exalted to allow us to suppose, that with all their sectional feeling in its favour, they can fail to appreciate it as it deserves.

It is the influence of the work abroad upon the medical character of this country that we fear. Should it reach Europe, and attract the attention of the pharmacutists of France or England, purporting, as it does, to come from a convention, representing the whole body of physicians in the United States, and professing to be worthy of that body, we greatly apprehend that its numerous imperfections, errors, and inconsistencies, instead of being traced to their proper source, may be placed to the account of the general ignorance of the profession on pharmaceutical subjects. We protest, however, in the name of our medical brethren throughout the Union, against such an interpretation of the claims of this hasty performance. Should these remarks meet the eye of persons in Europe, who may have seen and perused the *Pharmacopœia* published at New York, we wish to assure them that it will be wholly disclaimed as the representative of the condition of pharmacy among us. Should any standard be required, at this moment in existence, we should much rather stake the credit of the country upon the original *Pharmacopœia* of the United States, which, though very imperfect, from the haste in which it was prepared, is decidedly superior, as a whole, to the work which was intended to supersede it.

We understand that the *Pharmacopœia* of the United States, revised by the National Convention at Washington in January 1830, is now in the press, in this city. We hope that for the good as well as the credit of the country, it may not merit the same condemnation with the work which has been engaging our attention. We wait, however, for its appearance;—and when it does come into our hands, shall endeavour to give our readers an impartial account of its contents, whether for good or for evil.

QUARTERLY SUMMARY

OF

MEDICAL AND SURGICAL INTELLIGENCE.

I. ANATOMY.

1. *Human Horns*.—On the 2d of March M. Logés read to the French Academy of Medicine, an account of some human horns, and at the sitting of July 13th, M. Villeneuve, in the name of the committee appointed for that purpose, read a report upon his paper. The committee has added to M. Logés's case seventy-one others, collected out of various authors, to wit, thirty-one in men, thirty-seven in women, and three in young children. The horns were situated, in nine instances upon the head, in fourteen upon the forehead, and in twelve on the thigh; in the other instances they were found three times on the temple, five on the nose, two on the cheek, one on the jaw, four on the breast, four on the back, three on the penis and glans, one on the ischium, two on the knee and ham, one on the leg, and two on the feet and heel. The committee also cite from Bonnet, the case of a girl, who at three years of age had horns growing from every part of her body, so that at her thirteenth year, she was quite covered with them. Some of these horns were twisted like ram's-horns; when they fell off, others grew in their places; there was one horn three inches in length, at the end of each finger. The committee also agree in opinion with M. Breschet, that the skin and mucous membranes are the only tissues of the body capable of developing horns, and that the cartilaginous transformations, frequently met with upon the liver, spleen and lungs, should not be regarded as such.—*Archiv. Gen. July.*

2. *Bicephalous Child*.—We do not know that any beneficial results are likely to accrue to the operative part of the science of medicine, by the elaborate researches now going on in France, in relation to monstrosity; yet we can not avoid a human curiosity in relation to the subject—in this, our feeling is common to the whole human race, we believe—witness the common anxiety to see the nomadic exhibitions, annually and diurnally published by fiddle and hand-bill, of the five legged sheep, and double-headed snake, and all other such freaks, from a cat with two tails in a bottle of alcohol, up to the Siamese boys, and the still more famous Rita-Christina.

M. Geoffroy-Saint-Hilaire, whose lucubrations we have had frequent occasion to lay before our readers, continues to display an indefatigable zeal in the illustration of these singular specimens of organization; and in the July number of the *Archives*, has again favoured us with an account of a double-headed girl, born May 13, 1829, at Olus, in the Arrondissement of Saint Giron. This child was born dead, and was buried in a few hours afterwards; but the Marquis of Castenac, the sub-prefect of the Arrondissement, ordered it to be disinterred, after it had been three days under ground, and submitted to the examination of

three physicians. It was converted into a very perfect mummy by a druggist named Saintenat, and carried to Paris. In this subject, the right side was more developed than the left, which was just contrary to what had been noticed in Rita-Christina—besides, Rita-Christina had two hearts, united in a single pericardium, while this Pyrenean double-head had a separate pericardium for each heart.

M. Saintenat's mummy has a vermicular appendage about two inches in length at the posterior part of the sacrum, which looks like a tail. This singular appendage has indeed been noticed in all the monsters that were double above and single below; and accounts for the absence of lower extremities in one of the individuals. It proves the existence of what has, by some anatomists, been denominated an *arrest of development*. Rita-Christina had not this appendage, but in its place she had a scar, probably occasioned by the amputation of her tail.

II. PHYSIOLOGY.

3. *Mr Dobson on the Spleen.*—Mr Dobson has published a pamphlet upon the structure and function of the spleen, in which he gives an account of some experiments performed upon dogs, with certain deductions from his investigations, some of which we find in Dr Johnson's *Med. Chir. Review*, &c. for Oct. 1830.

Mr D. inquired into the changes produced in the spleens of dogs by the process of digestion, and found that until three hours after a full meal no visible alteration takes place in the organ. At the end of four hours it is much enlarged, and in five hours attains its maximum, after which it gradually diminishes in bulk for twelve hours.

Such is the statement of the results which Dr Johnson furnishes us with, and as he does not impart any of the circumstances of the experiments from which the deductions are drawn, we ought perhaps to have our mouths stopped; but we are, nevertheless, somewhat surprised to see such mathematical accuracy in the occurrences indicated, to wit, those stated to be observed at three hours, four hours, five hours, and twelve hours. The spleen is always various in the same species, and even in the same animal; we therefore like not to see such precision upon a physiological point, which, in itself and by its own nature, cannot be precise. Whether the results were obtained upon two dogs, or upon two hundred, it is all the same; they could not be obtained, upon dogs already opened before the ingestion of the food; and if they were so obtained the traumatic irritation were sufficient, we imagine, to vitiate the physiological results.

Mr D. also removed the spleens of dogs to see what effect would be thereby produced. The animal apparently suffered but little from the operation. On the next day it ate voraciously; this meal was followed in four hours by evident marks of a plethoric state, which subsided in about five hours from the commencement of the phenomena. The dog lived a month.

In another dog, after removing the spleen, there were no symptoms of plethora because he gave it food in small quantities, and repeated it frequently. No unpleasant symptom followed; the animal in three weeks was quite well. He then began to give full meals twice a day, which was followed by the same phenomena of plethora, and the animal, like the former, died in a month after this change in its diet was introduced.

In both animals the intestinal evacuations were of a lighter colour than natural.

Mr D. thinks the turgidity of the spleen commences at the end of the chymificative process, when the duodenum is receiving chyme from the stomach: hence the experimenter infers that "the spleen acts as a reservoir for containing the additional quantity of food which the vascular system has received by means of the nutritive process." He thinks that in five hours after a meal there is more blood in the system than at any other time, and as the vessels could not, with impunity, contain this increased proportion, the spleen acts as a reservoir for the surplus.

As Mr D.'s dog when fed upon abstemious fare continued to be comfortable, and, on the contrary, suffered under the symptoms of plethora when highly fed, the inference is that the removal of the spleen, by taking away the reservoir, permitted the new product of hematosis to accumulate in the vessels in addition to the general and standard amount of the circulating fluids.

He also infers, from his experiments, that when the system suffers an extensive loss of blood, the spleen furnishes a supply from its reservoir.

Under this aspect the spleen might be regarded in the light of an air-vessel in a forcing pump, designed for the purpose of keeping up a steady pressure on the escaping fluids.

We have selected the above notices for publication here, not only on account of any intrinsic interest they may possess, but also because they forcibly recall to mind the lectures of the late venerable professor Rush, whom we heard, seventeen years ago, detail almost precisely the same doctrines of the functions of the spleen; doctrines on which he long insisted with all that elegant and forcible eloquence which gave him the title, long to be his own, of the *facile princeps* of American physicians.

4. *Nature of the globules of the blood.*—In a memoir on the minute structure of animal tissues, M. Raspail teaches that the blood-globules are simply albuminous, and rests his opinion on the solubility of these globules in water, acetic acid, &c. M. Donné has arrived at a different conclusion in the following manner: when water is poured upon a small quantity of human blood, while under examination in the microscope, the globules soon disappear, and can not be found, except when carefully examined under a great magnifying power, and particularly by the light of a lamp—when we find that the water contains a number of small, round bodies, very transparent, and difficult to be distinguished, but which are absolutely insoluble, no matter how much diluted the blood may be.

This thing becomes much more evident when operating on the blood of the frog, whose globules are much larger; even by the light of the sun, it is manifest that these small round bodies are nothing more than the globules themselves, deprived of some of their elements. If it be desired to repeat this experiment on a large scale, one ounce of blood should be diluted in eighteen ounces of water, or more if necessary, to disable us from seeing the globules by the light of day; the mixture should then be filtered, and the plastic matter from the philter collected. When a small quantity of this substance, which possesses all the characters of fibrin, is put on a piece of glass with some water, and examined in the microscope by the light of a lamp, it presents all the globules in their primitive form.

By varying these experiments, it will be seen that the globules of blood are not completely soluble in the menstrua which dissolve albumen but do not dissolve fibrin. Thus, ammonia and acetic acid will cause them to disappear so completely that no trace of them can be found.

From these facts M. Donné concludes they are not a simple precipitate of albumen, as supposed by M. Raspail, but are formed of a tissue of fibrin, in the meshes of which the albumen and colouring matter are deposited. Indeed, in M. Raspail's opinion, albumen and fibrin are not two different principles, one being only a modification of the other: this is of little consequence to the question itself; all that M. Donné wishes to prove is, that the blood-globules are insoluble in water, and that if they are albuminous, it is albumen in the state commonly called fibrin by the chemists.

It is seen above that M. Donné's opinion on the globules differs from that of Hewson and MM. Prevost and Dumas, who considered them to be composed of a central vesicle enveloped in a stratum of colouring matter.

M. D. thinks that when they come out of a vein they are of a lenticular shape; but that their nucleus consists of a delicate tissue of fibrin containing in its meshes some albumen and red matter, pretty much in the same way as the hyaloid membrane contains the vitreous humour.

When placed in contact with water, or after remaining for some time in serum, they lose their flattened shape and become round, &c. *Archiv. Gen. August.*

5. *The Eye*.—Professor Rossi having conceived some doubts as to the continuity of the retina with the optic nerve, and on the faculty attributed to the former of transmitting the images of objects to the sensorium, he extracted an eye from its orbit, made a puncture in the sclerotica, a few lines distant from the cornea, and penetrated to the choroides; he then blew air into this opening, and suspended the eye by the optic nerve, until putrefaction had taken place. He afterwards opened the fibrous envelope as far as the optic nerve, and found the retina and choroides separated from the nerve and removed from it to the distance of a few lines, the vitreous body being in contact with it; he could now easily separate the putrefied sclerotica from the dried nerve. He thinks that the pigment of the choroides, which is detached by maceration and by washing, is a secreted substance, whose colour, according to the analysis of professor Lavini is owing to the presence of protoxide of iron.

He has not found betwixt the affections of the globe of the eye and those of the meninges and brain, that connexion that ought to exist if there were really a continuity of tissue; in cases of amaurosis of the optic nerve with loss of sight, the texture of the globe of the eye exhibits no alteration whatever. In cases of amaurosis of one side, the optic nerve, when compared with the opposite one, appears to be atrophied, while the retina is alike in both eyes, and even responds to the electro-galvanic influence. In cases of polypos of the frontal and maxillary sinuses, the author has found polypi of the size of a millet-seed on the choroid and retina which had not affected the sight of the person.

From the above facts, and others we shall not detail here, the professor concludes: 1. That the constituent parts of the globe of the eye are not prolongations of those of the encephalon. 2. That the choroid pigment is a product of secretion. 3. That the retina is not a continuation of the optic nerve, but probably serves in some way to modify the images which it transmits to it.—*Archiv. Gen. August.*

6. *On the Animal Temperature in different Latitudes*.—We extract the following from the *Edinburgh Medical and Surgical Journal* for October. A few years ago Dr John Davy made some interesting experiments on the differences which take place in the temperature of the human body, in passing to warmer or colder latitudes, (*Edinburgh New Philosophical Journal*), and the result was, that in warm climates it rises, and in cold climates falls a little. These experiments have been more lately repeated by M. Renaud, of Paris, during a voyage to the east. The voyage was from Toulon, by the Cape, to the Isle of Bourbon, the Maldivians, the Coromandel coast, Bengal and the coast of Pegu, Ceylon, the straits of Sunda, Java, and then home by the Cape to Havre; and it lasted from May 1827 to December 1828. The thermometers used were carefully compared by M. Arago with the standard at the observatory of Paris, both before and after the voyage, so that the accuracy of the observations is unquestionable. There are seven sets of experiments, four of which were made in the torrid and three in the temperate zones, and each set was made on the same twelve men, all of them living in good health, most of them athletic, and all fed and exercised almost entirely in the same manner. On the 1st of July, in 10° 4' north latitude, the air being 79° Fahrenheit, the average temperature of twelve Europeans was 99½°. On the 10th of August following, in 36° 10' south latitude, the air being 64½°, the average temperature of the body was 99½°.

On the 11th of September, under the line, with an atmospheric heat 86°, the temperature of the body was on an average very nearly 100°. Next year on the 13th of May, in latitude 7° 1' south, the air being 86°, the body was 99½°. On the 14th of October following, in 32° 23' south latitude, the air being 62½°, the body was 99°. On the 30th October, under the line, with an atmospheric temperature of 79°, that of the body 99½°. On the 4th December, in 46° north latitude, the air being 53½°, the body was 99°. Hence it will be perceived, that the range of the animal heat between climates where 53½° and 86° are the extreme temperatures of the atmosphere, is 1½° Fahrenheit, and that it rises as the atmospheric heat rises, and vice-versa, with some slight irregularities, probably to be ascribed to the coldness or heat of the climate which the subjects of experiment had just left.

III. PATHOLOGY.

7. *Ovarian Dropsy of great magnitude.*—Dr Hodge reports to us a case of a coloured woman, Juliana Matthews, who for about six years had suffered from a dropsy of the ovaries. Her natural constitution seemed very excellent; being a tall and strong female: her menstruation had always been painful. She had had children, which were generally small; has had no child since 1811 or 1812,—has been a widow since 1820: and has since menstruated regularly, but as usual with pain. The only abdominal complaint which preceded the ovarian disease, was obstinate costiveness; she often had not a stool for a week; frequently not for two weeks; and once was eighteen days without a passage per anum. She had once a severe attack of cholera morbus. In the spring of 1825, she, first discovered a “lump” in her abdomen, which enlarged steadily and rapidly. She resorted to various empirical remedies, and also to professional assistance, with no permanent advantage.

Dr H. first visited her in August 1826. She was then much larger than a female at the 9th month of utero-gestation; hard tumours could be felt in the right and left iliac regions, and also in the anterior portions of the lumbar region: fluctuation was very distinctly perceptible in the hypogastric and umbilical regions.

The disease increasing, and the uncomfortable feelings from weight and distention augmenting, she was tapped below the umbilicus, November 27, 1826, and two and a half gallons of a dark reddish-coloured fluid were drawn off, which, when at rest, deposited brown coloured flakes, resembling coagula of blood. The abdomen was but very partially emptied, and it was now evident, that the tumours extended far up into the hypochondriac regions, pressing on the colon, liver and stomach, and that other cysts existed, in which fluctuation was evident. The patient's general health was good, with the exception of constipation, which was ameliorated by medicine.

In June 1827 she was again tapped, and about two gallons of a serous coloured fluid were removed: and again, January 30, 1828. Her bowels still being costive, the oil of croton was given, with but trifling effect; afterwards, the elaterium, in combination with aloes and rhubarb;—this always operated, and seemed to have produced some durable impression, as afterwards, laxative medicines would operate, and often the stools were spontaneous.

On the 18th of June 1828, paracentesis abdominis was the fourth time performed, below the umbilicus; the discharge was of a light serous character, and was soon arrested by the falling of the tumours against the extremity of the cannula; considerable quantities flowed after the cannula was removed. The patient was quite unwell after this operation; suffered from pain in the abdomen, dysenteric stools, pain and great languor. She recovered and enjoyed her usual health. About this period her menses for the first time ceased, and did not afterwards return.

In May 1829, (27th inst.) the operation was again performed; the fluid was of a light colour, and amounted to about three gallons. The tumours had enlarged to a monstrous size, pressing on each side firmly against the ribs, and occupying all the lateral and anterior portions of the abdomen; it was with difficulty the patient could ascend or descend from her chamber, or even walk about the room. The skin was very tense, and small grooves could be felt, made in the cutis by the superficial veins; vesication would occasionally form on the lower part of the abdomen, and much fluid be evacuated—no bad consequences would result. The patient's general health was usually very good—no symptoms of irritation were present; she had occasionally attacks of pain in her limbs and abdomen, and great feelings of languor. This summer, also, she once had an alarming syncope—her head suddenly becoming very dizzy, and her senses and mind failing—with some slight convulsive affection. In the following autumn, she was in the same condition; more comfortable, however, from the coolness of the weather, although her swellings manifestly augmented. Early in the winter, she became the subject of a severe cold, affecting the chest, bron-

chills—which rendered her very uncomfortable. The cough afterwards continued with varying intensity, during the winter, spring, summer and autumn,—no effectual means were adopted for relieving it. Dr H. was not requested to visit her again until the beginning of the present month, when he found her much altered for the worse. Her cough was very severe, coming on in paroxysms, generally dry and hollow, but some mucous expectoration usually occurring after violent efforts; dyspnoea considerable, preventing her descending the staircase, of course leaving her room; frequently she could not lie down, and could move at any time only with difficulty—her pulse was full and tense, tongue clean, occasionally some fever at night. Her abdomen was now much increased in size, measuring from the pubis to the lower extremity of the sternum thirty-four inches, and round the body at the umbilicus fifty-eight inches. On the 3d instant, a puncture was made below the umbilicus from which very little fluid was discharged; a second puncture was then made, about an inch above the navel, where fluctuation was evident, and about two gallons of bloody fluid were evacuated. She was partially relieved by the operation—her cough was less dry, expectoration more free. In two or three days, she however suffered severely, from great soreness and pain over the whole abdomen; her cough was more troublesome, and she had fever at night. Bleeding, to fourteen ounces, relieved her very much, and for a time she was comparatively comfortable—her cough afterwards remaining free, and expectoration copious. Soon, however, she complained of great increase of languor and weakness, of wandering pains in her back, limbs and abdomen, restlessness at night, sometimes of great nausea, and even of vomiting, and occasionally of great coldness, particularly over the cervical and dorsal portions of the spine.

On Tuesday, December 21st, the breathing became much oppressed, without any apparently new cause, cough and expectoration increasing, and her abdomen again as large and tense as ever. Breathing continued to become more oppressed, and her strength failed rapidly. She died on the night of the 23d instant.

On Friday afternoon, December 24th, an examination of the body was made; present Drs Horner and Hodge, and Mess. Mifflin Wistar and Peace. Dr Bell also came in before the body was again closed. The corpse was much emaciated; the abdomen remarkably protuberant, now measuring fifty-one inches in circumference, and thirty-one inches from pubis to sternum. On dividing the abdominal parietes, none of the viscera could be observed; for an encysted tumour, or rather a congeries of such tumours, occupied the whole space from the pubis to the sternum, and from one lumbar region to the other; the ensiform cartilage being turned upwards on itself, so as to resemble in curvature a ram's horn, and the liver, stomach and transverse portion of the colon being pushed high up under the ribs, and the small intestines and the ascending and descending colon occupying the posterior portions on each side of the vertebræ. All the viscera were much diminished in size, and the liver of a lighter colour than natural. The tumour evidently originated from both ovaries, and indeed seemed to be formed out of these bodies, the cells of which being enormously enlarged and the parietes greatly thickened. The cysts were of various dimensions, some not containing more than a drachm of fluid, while others contained pints or even gallons. The largest cyst extended from a little below the umbilicus to the ensiform cartilage, and probably contained three gallons of fluid. The appearance of the fluid was exceedingly various in the different cysts; in some, it resembled a light coloured serum, in the large cyst it was of a very dark red or brown colour, and in others, almost every intermediate shade was observed. In the large cyst, was also discovered a great quantity of coagula of blood, of a light pink colour and of a very loose texture, free however from putrefaction. The tumour thus formed had contracted strong adhesions to the whole anterior walls of the abdomen, and also some weaker and more scattered connections laterally and posteriorly to the mesentery. These were all easily divided by the scalpel, and part of the fluid being evacuated, the whole mass, with the uterus, was removed by incisions through the cervix uteri and vagina. On the posterior and inferior part of the tumour, adhering by cellular tissue but not closely united to it, the uterus was noticed in a very disorganized state; its proper tissue being much enlarged

and diseased, and giving origin to two large tumours: one about the size of a hen's egg, but flattened, was osseous and could not be divided by the scalpel—the other, smaller, was cartilaginous. The uterine cavity was enlarged but much deformed, being apparently stretched in the direction of the Fallopian tubes, so as to form an irregular tri-cornered space. The lining membrane was of a light colour. The tumour when deprived of most of its liquid contents weighed twenty-five pounds, and the fluid emptied from the cysts including the coagula measured twenty-six pints.

This case is interesting as bearing on the question of extirpation in the early stages, as recommended and practised by Drs M^dDowel, Alban G. Smith and others (see Vol. I, &c. of this Journal). Such an operation, even if undertaken before adhesions had occurred, would probably have been here useless, if not fatal, from the diseased condition of the uterus and from both ovaries being involved in a common disease. A dissection was made about two years since at the Almshouse on an elderly subject greatly emaciated, in whom an encysted dropsy had existed for many years. The tumour was very large, extending nearly to the sternum, but rather flattened, so that the protuberance of the abdomen was not great. Here, no adhesions had been contracted; the uterus, right ovary and ligaments were natural; and the only attachment of the tumour, formed out of the left ovary, was an enlarged fallopian tube and a thickened broad ligament. The whole mass was with facility turned out of the abdomen, and an incision of an inch and a half through its pedicle separated it completely. Such a case, if early operated on, would afford every prospect of success; but, how can these cases be discriminated during life?

8. *Softening of the Uterus*.—The following account of this diseased condition of the uterus we extract from a very excellent review of the publications of MM. Tonnellé, Duplay, Dance and Luroth, on puerperal fever, uterine phlebitis and softening of the uterus, contained in the October Number 1830, of the Edinburgh Med. and Surg. Jour.

"In its incipient stage, softening of the uterus, according to the observations of Luroth, consists in a serous infiltration of the substance of the organ, in consequence of which, the parietes become extremely flaccid, and are very easily cut. The colour, however, is not materially altered, and although the inside of the uterus is usually lined by an exceedingly fetid pulp, this is no proof that the softening of the parietes is allied to gangrene or putrefaction, for the same fluid is sometimes found when the substance of the uterus is sound; and when the two appearances occur together, a little care will enable the dissector to ascertain that the odour does not necessarily adhere to the softened uterus. This form of the disease appears not to have been observed by M. Tonnellé, and it is certainly rare, when compared with what M. Luroth considers its more advanced, but M. Tonnellé its first stage; where the texture of the uterus is softened almost to a pulpy consistence, like an apple which has begun to decay, and consequently tears in the fingers when it is raised, or breaks down into pulp when squeezed between them. Softening of the uterus of the latter kind has been extremely common in all the epidemics of puerperal fever, which have been observed in Vienna and in Paris. It is sometimes partial, being confined either to patches of the uterus, or more frequently to a thin layer of its entire inner surface; but very frequently it is quite general, and affects the whole extent and thickness of the parietes. The colour of the texture is sometimes unaltered, sometimes rather paler than natural, occasionally rather darker. The smell of the softened parts is not putrid; but it requires some care to satisfy one's self of this, as the disease is always attended with a horribly fetid effusion on the inner surface. The parietes are sometimes thickened and spongy, but at other times they are attenuated, or, as it were, *atrophied*. In its extreme degree softening becomes the *putrescence* of the uterus of Boer and other German pathologists. Even then the tissue of the parietes has not a putrid odour; for the overpowering putrid smell exhaled by the organs of generation, according to Luroth, is still owing entirely to the dark pulp which lines the inner surface. This circumstance, which seems to have been overlooked, not only by Boer and his countrymen, but likewise by M.

Tonnellé, led to the name by which this, the highest degree of softening, has been generally known, and likewise to the notion entertained by some that it is of the nature of gangrene. Even in its worst form, softening of the uterus was sometimes produced, like suppuration of the veins, with a rapidity for which it is extremely difficult to account, unless we adopt the opinion of Boer, that it commences before delivery. In one of M. Tonnellé's cases, the patient, two days after an easy delivery, was attacked with the first symptoms of mischief, and died in twenty-four hours; yet the whole thickness of the uterus, over two-thirds of its extent, was reduced to a brown pulp, destitute of every trace of organization, and capable of being crushed between the fingers with the greatest facility. Among the two hundred and twenty-two cases of puerperal fever examined by M. Tonnellé, there were forty-nine in which the uterus was found softened, and among these the softening was superficial in twenty-nine, but deep in no fewer than twenty. When the softening was superficial, it was generally also in scattered patches only. When deep it commonly affected the whole extent of the organ. Superficial softening was always accompanied with some other affection, such as peritonitis, simple metritis, or inflammation of the uterine veins. The same was also generally the case in the instances of deep softening; but frequently the softening of the uterus was evidently the chief disorder, and in some instances it existed alone. It was obviously connected with very marked typhoid symptoms in every instance where the disorder was extensive and advanced, even when no other pathological change concurred with it.

The opinions of the authors who have noticed softening of the uterus, are much divided as to its nature. Some, as M. Duplay, consider it always the consequence of inflammation, and a few even view it as nothing else than gangrene. Luroth and Tonnellé, however, contest the accuracy of the last doctrine, and with some success. Decided gangrene of the uterus is always, as Luroth observes, preceded by acute inflammation, which is seldom remarked in the worst cases of uterine softening; in gangrene the parietes are unnaturally thickened, which in softening is far from essential; in gangrene there is an inflammatory circle or other boundary, which limits exactly the mortified part, while in softening there is no such circle, no exact boundary, but a gradual passage into the surrounding firm texture; and in gangrene there is a peculiar odour of the diseased tissue, but in softening no such odour is remarked, if care be taken to remove the inner pulpy layer. The question of the origin of softening of the uterus in inflammation is a much more doubtful one. Most of the authors who have noticed it consider that in some cases inflammation is its cause, because in its slighter degrees it is always attended with other unequivocal indications of simple metritis, peritonitis, or phlebitis. They do not, however, conceal the difficulty thrown in the way of this doctrine by the circumstance, that in its extreme degree, softening is not preceded by any obvious signs of inflammatory action; and generally, that the antecedent inflammatory reaction bears no relation whatever to the extent and degree of the softening. We may remark in general terms that from the analogy of other effects of inflammation, such as the gangrene, suppuration and infiltration which follow spreading cellular inflammation, the difficulty here stated does not appear a very insurmountable one. M. Tonnellé is disposed to consider the inflammatory appearances as secondary, and that softening of the uterus is, in the first instance, unconnected with inflammation, and probably dependent on a morbid state of the blood. Softening of the uterus is observed most generally after delivery; but Boer and his countrymen have rendered it not improbable, that general softening of the uterine parietes occurs in an inferior degree during pregnancy, and may be the cause of the subsequent development of putrescence of the uterus after delivery, as well as of occasional rupture of the uterus during labour, and likewise of the death of the fœtus during the latter months of utero-gestation."

9. *Disorganization of the Epidermis occurring in new born Infants.*—A very important disease occurring in new born infants, according to Jøerg, in his work *Über die Kinderkrankheiten*, page 310, is one characterized by a peculiar morbid condition of the epidermis, causing the latter to be detached upon the slightest touch, from the palms of the hands, the fingers, soles of the feet, toes

and frequently also from the entire surface of the body. Dr Jøerg has, however, only seen one case in which this condition of the epidermis extended over the whole surface: it was in an infant born at the full period and very vigorous. He has met with it most generally on the hands and feet. In every case he was convinced that the mother had been affected during pregnancy with syphilis. None of the infants affected with this disease survived over four or five days, and though born at the full period, they were almost always meagre and feeble. The parts despoiled of the epidermis became inflamed, which, in addition to the extreme feebleness of the infants, is the chief cause of their speedy death. Dr J. expresses entire ignorance as to the exact nature of this disease. The morbid condition of the skin upon the hands and feet is frequently accompanied with a pustular eruption on different parts of the body, the form and appearance of the pustules differing essentially from those of small pox. They resemble, however, the vaccine vesicle at about the twelfth or thirteenth day. The author has been unable to form any opinion as to the nature and progress of this eruption, in consequence of the short time during which the infants affected with this singular disease survived.

10. Neuralgia Rheumatica of the Diaphragm.—The following case of what is termed acute neuralgia rheumatica of the diaphragm, is related by Dr Coudret, interne à l'Hôtel Dieu, who was himself the subject of the disease, in the *Journal Complémentaire*. The abstract now presented is derived from Johnson's Review.

The patient was aged about twenty-nine years, of a nervous temperament, but enjoying good health. He had been subject, for some time, after an exposure to cold in the amphitheatre, to slight intercostal pain in the left side, occasionally exchanged for pains of a colicky nature in the bowels—for coryza—and for cyanche tonsillaris. On January 28, 1830, when the temperature was twelve degrees of Reaumur below zero, he was so imprudent as to have his hair cut short; immediately after which, he became affected with slight bronchitis, and some inflammation of the tunica conjunctiva. On the 8th of February, these affections being still in existence, he was exposed, while warm, to a current of cold air, and then repaired to the hospital, where he did not, at first, experience any particular affection. At 5 o'clock in the afternoon, he dined, but without appetite. At 8 o'clock, he experienced a febrile horripilation, general uneasiness, heaviness of head, pain in his joints, disinclination to motion. Soon after this a shiver was felt, succeeded by febrile re-action, violent pain in the limbs, loins and head, &c. He during the night was restless; the pains, at first general, became ultimately concentrated in the left lumbar region, and the lower part of the chest on the same side. Next day the skin was still dry and hot; the restlessness incessant; headach intense; feeling of great sanguineous congestion about the face; tongue pasty, but not red; thirst considerable; some nausea; urine pale; bowels costive; cough, with catarrhal expectoration; pain in the loins increased by the act of coughing. On percussion, the chest was throughout sonorous. At each effort to inspire, the patient found himself checked by a sudden and violent pain, apparently in the situation where the diaphragm is attached to the false ribs of the left side, and to the spine. He believed that he felt this pain in the tendinous centre of the diaphragm, whence it appeared to radiate along the course of the left diaphragmatic nerve to the neighbourhood of the clavicle of that side. The act of turning, the least effort to breathe, to expel the urine, to eructate, or blow his nose, increased this pain to exquisite torture. His common respiration was, also, short and embarrassed. Lastly, he felt a sensation in his left arm similar to what is described by those who labour under angina pectoris. Nothing was experienced about the right side of the chest. Careful pressure was made on all parts of the abdomen, but no uneasiness was produced in consequence. These phenomena convinced the patient that the disease was not pleuritis; but that the seat of the malady was the diaphragm. The fever was now very acute, the pulse full, hard and quick—in short, every thing indicated the necessity of venesection. He was immediately bled to a large amount, without inducing faintness. The blood was rich, but very little inflamed. Feeling some nausea, he took several glasses

of warm water, and cleared his stomach, but without discharging any remains of food, or bile. He now felt better, and had a mild perspiration. But the pain, as described, continued, and the febrile symptoms were soon renewed, with discontinuance of the perspiration. Thirty-five leeches were now applied to the anus, followed by a hot poultice to the same, and to the feet. These means completely removed the headach, and much of the general uneasiness; the perspiration was re-produced, and some repose would have been experienced, but for the pains in the region of the diaphragm, which continued to harass the patient. He now balanced between the application of forty or fifty leeches to the chest, or sinapisms to the same. Deciding in favour of the latter, he so managed them as to keep up a constant counter-irritation over the left side and back of the thorax, without producing vesication. Two days continuance of this discipline gave complete relief to his sufferings. On the 12th of February he was free from all complaint, save debility.

11. *Cancer of the Pancreas.*—The following case, related by M. Dupré, élève à l'Hotel Dieu, with the report of M. Forge, occurs in the *Revue Médicale*, *Avril* 1830. The subject of the disease was a female, fifty years of age, who, for a long time, had subsisted upon an unwholesome diet. She had suffered for a year vague pains in the abdomen, disordered digestion, and obstinate constipation. Her health became gradually undermined; her skin acquired a yellowish tint; pains were experienced in the region of the left kidney; these extended themselves towards the neighbouring organs, and the left groin. During her residence in the hospital, the patient laboured under the same symptoms as those described, but in a greater degree. To them were, also, added, an almost entire loss of appetite, bitter taste in the mouth, and a febrile exacerbation in the evening. All these symptoms appeared for a short time to abate under a soothing treatment. The cachectic condition of the patient, however, augmented, and an erysipelas occurring on the face, soon destroyed her life.

By the hand applied to the parietes of the abdomen externally, no tumour was detected. There had been no vomiting. M. Recamier, founding his opinion upon the intensity and course of the nephritic pain, and the small quantity of red and sedimentous urine which was discharged, suspected the existence of nephritis. The result of the examination after death of the head and chest need not be detailed, the viscera of the abdomen alone presenting any important lesions. The stomach was not diminished in size; its mucous membrane was injected, but otherwise healthy; the small intestines were in their normal condition; the ileo-cæcal valve was red; in the large intestines, many of the mucous follicles were found considerably enlarged. The liver was of its ordinary size, very yellow, and on cutting into it, communicated a greasy coating to the scalpel. The pancreas, at its middle and its smaller extremity, was increased to twice its ordinary volume, and adhered to the inferior part of the depression in the left kidney, compressing the ureter at its origin. Its right extremity was healthy; the diseased portion was of a greyish colour, hard and consistent. The scalpel, on cutting into it, caused a creaking noise. Its section presented a lardaceous appearance. Both kidneys were healthy. The pelvis of the left kidney was dilated; in consequence no doubt of the compression, experienced by the ureter, from the diseased pancreas. The rest of the urinary organs were in a healthy state.

Extract from the Report of M. Forge. A cancerous affection of the kidney, (pancreas?) either confined to this organ, or extending from it to the neighbouring parts, is a very rare disease, the diagnosis of which, in consequence of our ignorance of the functions of the pancreas, it is very difficult to establish. Cases of this disease are related in the thirtieth letter of Morgagni; in a Latin dissertation of Rakan of Göttingen, 1796; in the *Anatomie Médicale* of Portal, Vol. V.; in the *Anatomie Pathologique* of Andral, Vol. II. p. 582, and in the *Archives Generales*, Vol. XVI, p. 32, by M. Briere.

12. *Partial Gangrene of the Lungs, terminating favourably.*—The following case is contained in the *Jour. Hebdom.* Vol. III. We extract our notice

of it from the *Archives Générales* for August 1830. The patient was a porter, aged thirty years; of a tolerably strong constitution; had laboured under catarrhal symptoms for some time preceding his admission into La Pitié, under the care of M. Louis, on the 1st of May 1830. At first, his symptoms were heat, thirst, anorexia, oppression without pain, expectoration white and fetid, brought up with difficulty; his strength was diminished; obliged to remain in bed. The symptoms continued for six days nearly the same; after this period, however, the expectoration became of a reddish brown, and was still fetid; the debility of the patient was less, and he was able to leave his bed. On the 2d of May, attitude natural, movements free and varied—no appearance of prostration; respiration somewhat accelerated; expectoration tolerably copious, of a reddish-brown colour, and gangrenous odour; breath, also, equally fetid. Percussion obscure on the back, right side, and for two-fifths of the centre of the chest; respiration somewhat rough, with slight sound of friction; a weak ringing of the voice; no traces of crepitation; heat of surface somewhat increased; pulse 80, tolerably large; thirst moderate; nothing else remarkable. Twelve ounces of blood were taken away. The blood covered with a greyish-yellow coat, moderately firm, and surrounded with but a small amount of serosity. On the 4th, expectoration abundant, clear, and perhaps less fetid than on the 3d. Great crepitation on the right side of the back, slight pain at the same spot, pulse 64, no increase of heat. From this time until the 5th of June, when the patient quitted the hospital, the expectoration became less mucous, greenish, opaque, afterwards almost colourless, and gradually less fetid, until the 9th, when it had merely the peculiar odour of moist plaster; on the 10th, in consequence of a slight excess, the matter expectorated became at times, as it were, muddy, and more fetid than on the previous day; it continued fetid until the 13th, on the evening of which day there occurred a spitting of blood, to the amount of about two ounces. The succeeding day, fetor of expectoration diminished; bleeding, to eight ounces. The hæmoptysis did not return; the matter expectorated, lost gradually, its fetor, and assumed a more favourable appearance. On the 21st, it had scarcely any odour, and was of the appearance of that expectorated in simple pulmonary catarrh. After the 24th, it was entirely without odour; and from the 29th, both cough and expectoration were absent. The pulse remained always calm. There were no secondary symptoms, other than those described, and the patient was in a state of perfect health when he quitted the hospital, on the forty-eighth day from the first of the attack. According to M. Louis, the odour of the expectoration left no doubt as to this being a case of partial gangrene of the lungs. He does not think that a circumscribed gangrene of these organs in an individual, in the full vigour of life and in perfect health, is necessarily fatal, hence the favourable termination of this affection is not, perhaps, a very rare circumstance. In three other individuals, in whom gangrene of the lungs occurred, that fell under his notice within the last seven months, one alone died, and he had expectorated fetid matter for eight months previous to his admission into La Pitié. It is proper to remark, that in all the four cases here alluded to, the gangrene occurred in the right lung.

13. *Case of Trismus from decayed Teeth and Cold.*—In the October number 1830, of Johnson's Review, we have the following case. The only remarkable feature it presents is the readiness with which the symptoms apparently of a formidable disease gave way under a very simple treatment. Caroline Lewis, aged twenty-four, admitted into the Westminster Hospital under Mr Lynn, December 21, 1829, with her jaws firmly locked, complaining of great pain in her head and neck. It appears that her jaws closed suddenly one afternoon (three days before her admission) and resisted all her efforts to open them. She had suffered from a cold for a fortnight before, which had swelled her face inside and out, accompanied with most violent toothach. From her earliest recollection she had been troubled with frequent and severe attacks of toothach, being scarcely ever a month free. She menstruates regularly but scantily. Two or three of her side teeth being reduced to mere stumps, enabled her to swallow any liquid through

the opening they had left. December 21, a powder composed of four grains of calomel and half a drachm of jalap was directed internally, and three spoonfuls of the following mixture every four hours: liq. ant. tart. one ounce, liq. ammon. acet. three ounces, mist. camph. five ounces: m. f. She was bled to twelve ounces and fomentations were applied to the cheeks. 22d. There was less fever, and some abatement of the pain in the head and face. The fomentations and mixture continued. 23d. Much the same. Bowels freely opened. Fomentations to the face of lin. volatil. c. Two eggs per diem for diet. 24th. She was much the same all the morning, but complained of nausea, which increased, and towards evening a violent fit of vomiting came on; she felt as though choking, when experiencing a "crunching" attended with violent pain, her mouth opened. 25th. Much better, pain in the face less. 26th. The glands on the right side of the neck somewhat enlarged, and her face not quite free from pain. On examining her mouth, the whole of her teeth, with the exception of the three or four front ones, were found to be in a state of decay, most of them that remained being merely blackened stumps; tongue tolerably clear; bowels confined. January 3d. Dismissed well: she refusing to have any thing done to her teeth.

14. *Inflammation of the Inferior Cava—Edema of the Lower Extremities—circulation by anastomosis.*—A very interesting case of phlebitis occurring in the inferior vena cava is reported by Dr Hourmann in the French *Lancet*, an abstract of which we obtain from the *Journal Universel*, tom. 58, cahier 174. On the 8th of May 1830, a man, following the business of a porter, was admitted into La Pitié. He was fifty years of age, of apparently good constitution, and had hitherto enjoyed uninterrupted health. Some weeks previously to his entrance into the hospital, he had fallen upon a stair way, and struck the right side of the chest violently against one of the steps. He was, however, able to rise; leeches were applied, but a dull pain continued to be felt at the spot. About fifteen days subsequently, he perceived a swelling of the right foot, extending soon to the whole limb of that side. A pain, which he compared to a sense of stiffness was felt in the right groin, especially when he attempted to walk. The swelling of the limb progressively augmented; the sense of uneasiness in the groin extended to the iliac fossa, when the left inferior extremity, heretofore unaffected, began to swell. This was his condition when he entered the hospital. No disturbance of function was visible in the viscera, and with the exception of the intumescence of his limbs, he complained of no disease. M. Louis pronounced it to be a case of phlebitis, which had commenced in the right crural vein and extended thence successively to the external iliac, primitive iliac and finally to the external iliac veins. Until the latter vein had become involved in the inflammation, the circulation of the left inferior extremity experienced no impediment, which explains why no infiltration took place previously on this side. In the course of a few days many veins began to develop themselves beneath the skin, commencing at the groins, and gradually passing up over the parietes of the abdomen, towards the lower part of the chest. One of these veins, on both sides, extended to the neighbourhood of the axilla. Their volume was at first inconsiderable, but it soon increased, and those which passed to the arm pits attained finally the size of a goose quill. When compressed, the blood accumulated in them below the finger. If the veins were first emptied by pressing the blood towards the chest with the finger, they were quickly refilled by the blood darting into them from towards the groins. Independent of the development of these veins, there could be no doubt of an impediment existing to the passage of the blood, through the inferior extremities, by the ordinary route. The blood arriving at the groin, not being able to pass through the crural vein, escaped into the saphena, and from thence, inverting by its impulsion the natural course of that which arrives from the abdominal parietes, it formed itself a passage towards the heart through the veins of the integuments. The case assumed a very favourable aspect—from some indications of a pleuro-pneumonia of the left side, it was at one time, however, feared, that the ordinary result of phlebitis had occurred—the passage of pus into the circulation. But by

prompt remedies the symptoms alluded to speedily gave way. M. Louis confined himself, so far as it regarded active remedies, to repeated bleedings. On the 27th of June the patient was so far recovered as to desire his discharge.

15. *Arachnoiditis Spinalis*.—The following case, which may be adduced in confirmation of the opinions of Bellingeri in relation to the functions of the spinal marrow and nerves, is related by J. Arrigi in the *Annali d'Omodei*, March 1830. The following notice of it occurs in the *Journal des Progres*, &c. 1830, tom. 8. Louis Vecchi, twenty-four years old, of a robust constitution, had been attacked one year previous to his present disease with a paroxysm of acute gout. He was seized, in the month of January 1827, with an acute pain of the muscles on the left side of the neck, without fever. Dr Arrigi considered this pain to be rheumatic and accordingly treated it by repeated application of leeches, emollient fomentations and plasters of cicuta and hyosciamus. These means produced no abatement of the pain. Febrile symptoms made their appearance; the relator was now convinced that his first diagnostic was incorrect, and was led to believe that the pain felt in the flexor muscles of the neck was symptomatic of an affection of the spinal cord or of its envelopes. He accordingly applied along the cervical vertebrae a large quantity of leeches and cups, giving at the same time internally the ext. cicuta, laurel water and the alcoholic extract of nux vomica. Drastic purgatives and general and local baths were also resorted to, but all without effect. A blister was then applied to the neck and kept open; the pains, however, still remained equally acute. The sufferings of the patient were only calmed for a period by opiates. The case remained thus for three months, when to the pain were added a difficulty of respiration and deglutition, and an entire inability to perform the movements required in mastication. Exhaustion was soon manifest in consequence of the patient being unable to take any other than liquid aliment. The face became red and thin; the eyes surrounded with a livid circle. The neck, bent towards the left shoulder, could not be made straight in consequence of the permanent contraction of the flexors of that side. Obstinate costiveness took place and the patient survived but a short time.—On an examination of the body after death, a slight effusion of blood was discovered, between the spinal dura mater and arachnoid, from the atlas to the last cervical vertebra. The arachnoid was itself spotted and reddened, and as it were of a velvet appearance, at that part which corresponded with the anterior and left lateral faces of the spinal chord. The pia mater presented the same appearances, with the exception of its being rather more consistent than ordinary, and of some red points on its left aperture, and in the nerves which pass from thence; the spinal marrow presented no alteration. Comparing these morbid appearances with the phenomena observed during life, Dr A. inquires, whether the very decided inflammation of the membranes, enveloping the left lateral cord of the spinal marrow; an inflammation which extended even into the substance of the cord itself, and into the corresponding nervous filaments; does not confirm the opinion of Bellingeri, (who considers the lateral fasciculi of the spinal marrow as presiding over the organic functions) inasmuch as during life, mastication, deglutition and respiration were sensibly affected. The Doctor conceives, also, that the inflammation of the apertures of the pia mater and of the arachnoid enveloping the anterior cords of the cervical portion of the spinal marrow, indicates that these fasciculi are appropriated only to the movement of flexion, the evidence of which he conceives is derived from the spasmodic contraction of the flexor muscles of the neck, which fact also confirms the opinions of Bellingeri upon the functions of the spinal marrow.

16. *Hypertrophy of the Muscular Coat of the Stomach*.—Johnson, in the October number of his *Journal*, presents the following case from the *Journal Hebdomadaire*.—It is related by M. Reynaud. A labourer, aged fifty-eight years, of a robust constitution, was seized, towards the end of May 1828, with symptoms of the epidemic which then prevailed in Paris. For two or three months, this man had complained of loss of appetite, urgent thirst, pains in his limbs and arms, which last had diminished, but never entirely disappeared, and were succeeded

by paralysis of the lower extremities. In fact, for three months before his death, he was entirely disabled from walking. When he came under the reporter's care, the hands and arms were still the seat of darting pains, and were contracted and distorted. He now also complained of constant pain at the pit of the stomach and under the sternum. His appetite had been quite gone for a month. The epigastrium offered great resistance on pressure—the vomitings were frequent—the tongue was moist and natural—thirst considerable—obstinate constipation—skin dry—pulse slightly accelerated—emaciation advanced. These symptoms continued until the 3d of April, when the patient died.

Dissection. Passing over the appearances discovered in the head and thorax, we find that the stomach was more ample than natural, and had contracted some adhesions with the liver. The organ contained some undigested matters, and about two pints of a dark coloured fluid. The mucous membrane was rather thinner than natural. The pyloric orifice would scarcely admit the point of the little finger. There was a thickened and *scirrhus* state of the cellular substance interposed between the coats of the stomach for a short distance around the pylorus. But the whole parietes of the organ were in a state of great hypertrophy. This was seated in the muscular tissue of the stomach, which was as red as the fibres of any of the voluntary muscles. The lesions which were discovered in the cortical substance of the brain were supposed to account for the loss of sense and motion in the lower extremities. "But as they did not appear satisfactory to us," observes Dr J., "we shall not occupy space with them here." The hypertrophy of the muscular coat of the stomach is curious and interesting. We regret, however, that Dr J. has not thought proper to present to us the examination of the head and chest as detailed by the relater, particularly as we have not by us the number of the journal in which the case originally appeared. Had we been presented with what this gentleman calls "the minute but useless details of dissection" from the period of Bonetus to the present, we are well persuaded that we should have had less reason to complain of the obscurity with which many points in pathology are now enveloped. We shall never arrive at any thing like certainty in our science until all are convinced of the necessity of examining minutely, in dissections, into the condition of every organ, and carefully recording all the morbid appearances met with, however uninteresting they may appear at the time.

17. *Enlargement of the Sub-Maxillary Gland, caused by a Bristle introduced into the duct of Wharton.*—We extract this curious case from the August number of the *Revue Médicale*, 1830. It is related by M. Robert, anatomical aid to the faculty of medicine of Paris. This gentleman was consulted in the month of September 1829, by the porter of the house in which he resided. He was a shoemaker by profession, forty years of age, of a lymphatic constitution. For some time past he had a swelling in the right sub-maxillary region, attended with but little pain. It frequently varied in its bulk, but this was always considerable; it was attended with a frequent discharge from the inferior part of the mouth, of a muco-purulent fluid. The sub-maxillary gland rose above the level of the lower jaw, and appeared to be enlarged to about three times its ordinary bulk. Pressure upon it did not increase the pain, but caused a rather copious discharge to take place from the duct of Wharton, and from a small accidental opening alongside of it. M. Robert suspected at first the presence in the duct of a salivary calculus, but a probe, introduced into the orifice of the duct, passed for about an inch in the course of the latter without indicating the presence of any foreign body. M. R. presumed, therefore, that in consequence of exposure to cold and humidity the patient was affected with a chronic inflammatory engorgement of the sub-maxillary gland. He in consequence directed the neck to be covered during the day with a large and thickly wadded cravat, and at night with emollient cataplasms; in addition gargles—a bitter tisane and occasional purgatives. Three months passed without any change occurring in the symptoms, when one day the patient came to M. R. to inform him that the end of a hog's bristle projected from one of the small ulcerations in the mouth, and pricked his tongue. The bristle was easily extracted by the forceps,

and by the end of a week the swelling, pain, and discharge entirely disappeared. The bristle extracted was one of those used by persons of his trade, to direct the thread in sewing shoes. A portion of these is frequently bitten off between the teeth. The portion which in this case had insinuated itself into the duct of Wharton was about two inches long, and bent to an angle at one of its extremities. The inflammation caused by the presence of the bristle in the duct had no doubt been propagated along the latter to the whole substance of the gland. If cases similar to this have been previously observed, they must be very rare; none such is recorded in any of the works that have fallen under our notice. We have, however, seen one case of intumescence of the sub-lingual gland from the insinuation into one of the ducts of a minute splinter of wood.

18. State of the Salivary Glands when under the Mercurial Influence.—It is very generally believed that the salivation produced by mercury is the result of an inflammation of the salivary glands; but in an examination made by M. Cruveilhier, of these glands in an individual who had died during a violent salivation caused by the administration of eight grains of the proto-chloride of mercury, they did not present any traces of inflammation. The cellular membrane between the lobule of the glands was the seat of a slight serous infiltration. This fact is recorded in the *Compte Rendu des Travaux de la Société Anatomique*, par M. Bérard, Secrétaire, Rev. Méd. Juin 1830.

19. Membranous Inflammation of the Cheek.—This affection is particularly described by M. Guersent in the ninety-first number of the *Journal Hebdomadaire*. It differs from the ordinary form of gangrene of the mouth in being a much milder disease. It is more frequent in childhood than in adult life. In the commencement, the mucous membrane of the cheek appears a little swollen, and beneath the epidermis there form small membranous patches, which finally coalesce, and spread over the cheek, gums, tongue and neighbouring parts. The glands of the neck become more or less enlarged; as yet, however, there is no ulceration of the cheek. In the second stage the intumescence of the glands in the neck is increased, the face is tumid, the breath fetid, the layers of false membrane on the inside of the cheek become detached and assume a greyish colour, and a copious sero-sanguineous discharge occurs. There is generally not much fever; the pain varies in different subjects, the salivary secretion is always abundant. In its third stage the progress of the disease is slower, and it may terminate either in gangrene or resolution. If the latter, the sloughs being thrown off, the denuded surface is surrounded by a reddish areola, which contracts the ulcer from the circumference towards the centre, whilst absorption appears to be at work on the border of the membranous exudations. In other cases, when the part affected is extensive, absorption takes place in various spots even from the commencement of the disease. This affection may disappear and again return several times in the same individual. When it extends to the sub-mucous cellular membrane, it is very apt to terminate in gangrene, which, however, never possesses the malignity, nor advances with the rapidity of the true gangrene of the mouth. The disease is seldom attended with danger, nor in the opinion of M. Guersent is it contagious. It occurs chiefly in children debilitated by chronic affections, bad food, or the air of hospitals; it often follows small pox and other eruptive diseases, and appears, in the judgment of our author, to depend on a general alteration of the fluids. It seldom passes from the mouth to the larynx; one example of this kind was observed two years ago in the practice of M. Jadelot. With respect to the treatment, topical applications only are of benefit. If much pain is felt, and the glands of the neck are considerably swollen, the application of leeches will be of advantage. A mixture of muriatic acid and honey in equal proportions, or with a greater quantity of the acid, if necessary, M. Guersent considers to be the best application to the part affected. He is partial also to the nitrate of silver; care being taken not to allow any portion to be broken off in the patient's mouth. When other diseases co-exist with the one under consideration, they are of course, to be combated by the treatment adapted to each.

20. *Small pox and varioloid epidemic in Copenhagen.*—In a history of the epidemic small pox which reigned in Copenhagen from 1825 to the summer of 1827, by Dr Mühl, contained in Otto's *Bibliothek for Læger*, Januar-Marts 1828, we have an account of the result of six hundred and twenty-three cases. Of these thirty-five, or five and two-thirds per cent died; namely, among one hundred and seventy-eight cases occurring in the unprotected, thirty-three deaths took place, or eighteen and a half per cent, and of four hundred and thirty-eight cases which occurred in the vaccinated, two terminated fatally. But in neither of the fatal cases was there any certainty that the patients had been effectually vaccinated.

21. *Cases showing the effects of the suppression of habitual evacuations.*—Three or four cases are reported from the practice of M. Louis, in La Pitie, illustrative of the effects of suppressing habitual evacuations: our account of these is derived from the *Medico-Chirurgical Review* for October 1830.

Case 1. A coach driver aged twenty-five years, had suffered from an ulcer of long standing on each of his legs; of these he was cured in La Pitie in the space of six weeks, and discharged. In about three weeks afterwards, he returned to the hospital, complaining that in two days after he had left it, without any ostensible cause, he was seized with acute pain in the left flank, and also in the left side of the chest, attended with some fever, loss of appetite, and diarrhea, but without cough or expectoration. Bleeding did not relieve these symptoms. When examined on the 28th of April, the day of his re-admission, the following was his condition: heat of surface increased; pulse rather accelerated; thirst; white tongue; ten motions in the twenty-four hours; acute pain in the left flank, increased on pressure, and extending to the groin of that side; a tumour developed in the left hypochondriac region, protruding several inches beyond the level of the false ribs. The inferior part of the left side of the chest sounded dull, and no respiration was there heard, but it was clear in every other direction. The tumour appeared to M. Louis to be an enlarged spleen; and he thought this enlargement, as well as the diarrhea, was owing to the suppression of the long established drain from the ulcers on the legs. He accordingly endeavoured to re-establish the discharge by means of a large blister to the leg, and twenty leeches to the left flank and side of the chest. In two days the pains had nearly ceased, and the diarrhea was much diminished. The size of the spleen also decreased rapidly, and by the 19th of May, there was no vestige of tumour in the left side, and the chest on that side was sonorous throughout. He was discharged cured. We forgot to mention that an issue had been established in the flank.

Case 2. This was a deaf, but very intelligent person, about fifty-five years of age, who came to La Pitie in the beginning of last winter, with a large ulcer of several years standing, on the malleolus internus. It was dressed regularly every day and soon healed. In two or three days after the complete cicatrization, the patient, who had previously been in good health, lost his appetite, had nausea, uneasiness, lassitude, without any other symptom that could indicate any particular disease. These symptoms continued to increase for eight days, when M. Recamier applied a large blister to the seat of the healed ulcer. As soon as a suppuration was established, all the symptoms diminished, and in the course of a week, they entirely disappeared. The patient remained three months in the hospital, and had no return of complaint. The blister was then allowed to heal, and health continued.

Case 3. A female, aged forty years, had a vaginal discharge for several years, which was suddenly and totally suppressed by a severe moral affection. From that time the appetite and strength diminished—she complained of pains in the epigastrium; wasted in flesh; and, after three months, was obliged to enter the hospital. M. Louis endeavoured to re-establish the vaginal discharge by means of the vapour bath—sinapisms, &c.; and in about eight days, by these remedies succeeded in doing so, from which period all the symptoms above mentioned gradually diminished, and at length disappeared.

Case 4. A female, aged sixty-two years, was received into the hospital on the 23d of May last. The catamenia had ceased about twelve years previously, since which she was subject to palpitations of the heart and pains in her head. For

these she had been bled eight times. Her legs swelled occasionally in the evenings. During the last six months she had leucorrhœa of inodorous character. Having been severely frightened by some ruffians, and beaten by them, the discharge suddenly stopped, and soon after this she felt depressed, with headach, giddiness, some obscurity of vision, constant drowsiness, cramps in her limbs, with some dyspnœa and œdema of the feet. Nevertheless she was free from the palpitation, but her appetite disappeared. These symptoms continued unabated for eight days, and were in the same state when she entered the hospital on the 23d of May. She appeared to have a good constitution; pulse eighty-four, regular, as were the motions of the heart, which presented no appearance of enlargement; lungs sound. A large blister was applied to the inside of the right leg; vapour baths to the lower half of the body; sinapisms to the feet. 24th. Pulse ninety-six; other symptoms unchanged. Twenty leeches were applied to the lower extremities. 25th. During the bleeding of the leeches, the leucorrhœal discharge partially returned, but did not continue. The symptoms, however, were all mitigated, and when the blister came to discharge freely, they disappeared, with the exception of considerable debility, which required tonics and nourishing diet. Some threatenings of her former symptoms, however, required the establishment of an issue in the thigh, which entirely removed them. The foregoing cases are certainly highly interesting; they afford a caution to young practitioners, not to suppress suddenly any discharge which has been long established in any part of the system. We have at the present time under our care a lady about sixty years of age, of a good constitution, by whom we were some years since consulted, in consequence of an ulcer on the right ankle, which was connected with a varicose condition of the veins of the leg, and had existed for a considerable time—it was attended with a great deal of pain and considerable discharge. Under an appropriate treatment the varicose condition of the veins became very much improved, and the ulcer healed completely. About a week after its entire cicatrization, the patient was seized suddenly with a violent pain in the left side, about the lower part of the chest, a sense of suffocation, quick and hard pulse, and delirium. Bleeding, purgatives, and a blister to the seat of the pain failed in removing the pain and oppression of the chest, though they abated the delirium; vesication, however, being induced upon the cicatrix of the ulcer, and dressed with basilicon ointment until suppuration was established, all the symptoms were very speedily removed, and so long as the sore existed did not return. Twice since then the ulcer has been healed up, and both times has been followed by the same symptoms as those described, though in a more violent degree, and they have only disappeared upon the establishment of a suppurating surface, at the seat of the original ulcer, during the continuance of which her general health is always good.

IV. THERAPEUTICS.

22. *Treatment of Leucorrhœa.*—In a small octavo volume lately published in London, under the title of "Practical Observations on Leucorrhœa, Fluor albus, or Weakness, with cases illustrative of a new mode of treatment," Mr George Jewel enters somewhat fully on the nature, character, signs and treatment of this disease. We confine ourselves to an abridged statement of the plan of treatment he proposed. Mr Jewel places the most perfect reliance on the local application of the nitrate of silver, but at the same time is anxious to impress on the attention of the practitioner the necessity of resorting in all instances to what are termed general principles. He recommends tepid ablutions, consisting of one part of vinegar to two parts of water. He thinks that more harm than good is done by cold sponging the loins, so often had recourse to. In his opinion the cold bath is often hazardous, particularly when the patient is enfeebled by the discharge, easily put out of breath and when her digestive organs are disordered. He does not seem to have a high opinion of cantharides, as recommended in

England and in this country, and states that astringent injections have usually failed to cure this complaint.

Mr Jewel's mode of practice in this troublesome disease will be exemplified by the following case:

"S. J., aged forty-nine, admitted a patient under my care, at the St George and St James's Dispensary, on the 10th of June. She is the mother of fourteen children, exclusive of two abortions, and has, during the last twelve months, been subject to profuse catamenia and excessive leucorrhœal discharge, of a yellowish colour. She has pain in the loins, shooting in paroxysms through the region of the uterus, in which there is also a sense of fulness and throbbing. She complains of a great languor, with loss of appetite and uneasiness at the pit of the stomach. She is frequently attacked with the globus hystericus, and disturbance about the head, and says that a flow of tears affords her much relief. Pulse eighty-five. Bowels confined.

Ten ounces of blood to be abstracted from over the sacrum by cupping.

R. Magnes. sulph.	Six drachms.
Infus. rosæ	Seven and a half fluid ounces.
Acid. sulph. dil.	One drachm.

M. ft. mist. cujus sumantur cochlearia duo vel tria ampla, mane quotidie.

R. Argent. nitrat.	Twelve grains.
Aq. distill.	Six fluid ounces.

M. ft. injectio.

14th. During a period of twenty-four hours after the cupping, she felt extremely faint and sick, and now complains of increased languor. Says she has used the injection regularly, notwithstanding the presence of the catamenia, and that it occasioned no degree of pain, except a little smarting; the parts having been for some time in an irritable state. To omit the aperient medicine. The strength of the injection to be increased from two grains to four to the ounce of water; and to take a pill, containing five grains of the extract of hyosciamus and half a grain of opium, at bed time.

18th. The sanguineous discharge has ceased, having continued only a week, its usual period being from ten days to a fortnight. The leucorrhœal fluid has become white and thinner than it has been for several months. The local pains are greatly relieved, but she still complains of occasional heat and throbbing about the womb. To continue the injection.

22d. The leucorrhœa has ceased, and the local heat and pains have almost left her. There is still great languor and loss of appetite.

R. Infus. rosæ	Seven and a half fluid ounces.
Sulph. quinin.	One scruple.

M. ft. mist. cujus sumantur cochlearia duo ampla, ter die.

To continue the injection.

26th. The vaginal discharge has not re-appeared. Her spirits are better, and the appetite improves.

Continuentur remedia.

30th. There is no leucorrhœa. Her general health continues to improve, and she intends to go into the country in the course of a few days. Discharged cured."

The mode of application of the nitrate of silver, which Mr J. has employed is either to conceal the caustic in a silver tube precisely on the principle of its application in strictures, or to use a solution of the nitrate, in the proportion of three grains to the ounce of water, gradually increasing the strength either in the form of an injection or in the following manner. A bit of sponge, firmly and neatly tied to a piece of whalebone, is to be moistened with the solution, and carefully introduced into the vagina up to the os uteri. This mode, he conceives, is preferable to injections, and can be effected by the patient herself.

Mr Jewel speaks favourably of iodine in leucorrhœa. After remarking on the influence of this remedy in the glandular parts of the body, he states that its effects upon the uterine system in particular, in almost all the cases in which he has employed it, have been marked and decisive, and that he has every reason to believe iodine is peculiarly adapted to assist in the removal of leucorrhœal disease.

Our readers, by a reference to the sixth volume of this Journal, page 806, will perceive that this remedy has been used advantageously in leucorrhœa by one of the editors, Dr Bell, who has also found it to act promptly in the uterine system.

23. Treatment of Strumous Iritis.—Mr Middlemore, assistant surgeon to the Birmingham Eye Infirmary, has published, in the eighth number of the Midland Medical and Surgical Reporter, (May 1830) a quarterly report of the cases treated at that establishment during the last three months. From this report we extract the following remarks on the treatment of strumous iritis. "It would be trifling to enumerate the various plans of treatment recommended for the cure of this troublesome disease; no 'one plan' will succeed; a treatment directed to the circumstances of each particular case will always be necessary; for a delicate child, I should advise small doses of the hydrargyrus c. creta every morning; a grain of quinine twice a day; every other evening a warm bath, and should the skin be harsh and dry, notwithstanding its employment, friction with the hand, or with a soft brush, should be used, and on no account should suitable clothing, with a view to maintain perfect warmth of the surface, be neglected. A small issue in the arm; moderate (not fatiguing) exercise must not be omitted, and perhaps riding on horseback surpasses in excellence all other modes of taking it; without specifying any particular articles of diet, I may say, in the general, that it should be of a light and nutritious character, animal food being allowed only every other day."

Mr M. has been experimenting with the spirit of turpentine in ordinary iritis, and the results appear to be confirmatory of the observations of Mr Carmichael and Mr Guthrie. He has given it with great advantage to patients who, from delicacy or peculiarity of constitution, are unable to take mercury to the production of salivation.

Mr M. strongly recommends the exhibition of a drachm of turpentine two or three times a day, in those cases in which after the acute symptoms have been relieved by mercury, there remains a chronic disorganizing inflammation in the part. He moreover urgently recommends the early exhibition of the same remedy in choroidal and retinal inflammations.

The substance of this article is borrowed from the *Medico-Chirurgical Review*.

24. Acetate of Morphia in various diseases.—Dr Bardsley, in his "Hospital facts and observations, &c." a work already quoted in this Journal, has entered somewhat largely on the use of the acetate of morphia in various diseases. He has found it particularly useful in cases of pain at the pit of the stomach, in pyrosis, in uterine diseases, and in neuralgia. Not having the work before us at this moment, we shall quote a few cases, as abridged in the *Medico-Chirurgical Review* for October last.

Michael Sharples, aged twenty-nine, an industrious man with a numerous family, had experienced much pain at the stomach occasionally for several months, and so severe had it been for the last three weeks, that he could not follow his usual employment. His spirits were low, appetite gone, and bowels costive. Leeches and a blister had been tried. The bowels being opened by purging medicine, a quarter of a grain of the acetate was given three times, daily, with excellent effect. In five weeks he was discharged cured, but he subsequently applied with a relapse, which was combated successfully by the same plan of treatment.

We will cite another case.

A young man had suffered for some months from such a gnawing pain at the stomach, that he could not continue his occupation, was reduced to poverty, and at last attempted to poison himself by laudanum. After a short course of aperients, Dr Bardsley gave half a grain of the acetate twice, daily; so much relief ensued that the dose was diminished; and after the expiration of several weeks, he perfectly recovered both his mental and bodily strength.

In the only case of pyrosis which Dr Bardsley details, the patient, a female aged twenty-six, had always been delicate, but suffered severely for the last two months, from gnawing pain at the pit of the stomach, copious discharge of an

acid fluid from the mouth, flatulence and capricious appetite. After castor oil the acetate was prescribed, a fourth of a grain twice, daily; and in six weeks the patient was discharged cured.

It is not to be supposed, however, that Dr B. regards the acetate of morphia as a sovereign remedy in all cases of dyspepsia. So far from this he alludes to several cases of the disease in which the remedy was productive of little or no relief. This is exactly what we should have anticipated, from the known effects of the remedy, and the diversity that exists in the nature and characters of dyspepsia. Dr B. does not appear to think as favourably of *opium* in stomach complaints as of the morphia, and among the cases he details we notice some in which the former of these remedies had been used ineffectually before Dr B. resorted to the latter. In our own practice we have seen opium very useful and even completely successful in that complaint. In all such cases the pain recurred after eating, and continued so long as the articles ingested remained in the stomach. Under such circumstances a small dose of opium given half an hour before meals, and repeated during a week or two, sufficed to effect a cure. It is very plain that in these cases the pain was nervous and not the result of inflammation, and that care was taken to ascertain the true nature of the disease before resorting to this plan of treatment.

Dr B. has used the same remedy with palliative and remedial effect in scirrhus and induration of the uterus, and particularly in painful menstruation. In a case of the latter disease he ordered the patient "to take a quarter of a grain of the acetate of morphia on the first accession of pain, and to continue this proportion every half hour, whilst it was violent. The second dose afforded her very great relief, without in the least suppressing the discharge," and at the time Dr B. was writing she took the morphia at every monthly period, with the same advantage.

Nor did Dr Bardsley use the morphia with less advantage or success in neuralgia of the face, forehead, lower jaw, &c. In all these cases the remedy was administered internally. On the subject of this remedy Dr B. makes the following general remarks:

"The above examples seem sufficient to establish the remedial efficacy of the acetate of morphia in several affections. It must be allowed, that morphia has not always answered the intentions with which it had been employed; but the proportion of the favourable cases has been considerable, compared to those in which it has failed. I have never witnessed any *pernicious consequences* from a prudent use of the morphia. I am led to recommend the acetate of morphia in preference to opium, from a conviction that its efficacy may be equally relied upon, whilst its administration will be unattended by the *distressing headach, excessive constipation and other unpleasant symptoms* which that drug in large doses mostly induces. It appears to be the chief advantage of morphia, that it may be employed in those cases in which it is desirable to obtain a narcotic effect, and at the same time of the first importance to avoid constipation. It is proper to unload the bowels before commencing with the acetate, so as to give the remedy a fair chance. It is prudent to commence with not more than a quarter of a grain, which may be gradually increased to half a grain, a grain or two grains, according to the urgency of the symptoms and the effects produced. These doses are applicable to adults. I have mostly prescribed it in this form of pill, which seems to answer very well."

25. *Treatment of Amaurosis by the external application of Strychnia.*—Mr Middlemore, from whose Quarterly Report of cases treated at the Birmingham Eye Infirmary we have already offered an extract, recommends the use of strychnine in those cases of amaurosis produced by the overstraining the unnatural or diminished stimulus of the visual organ, or by any cause capable of impairing the tone or vigour of the retina without producing disorganization of that delicate part, accompanied or not with diminished strength of the constitution. "In all these cases, I believe, the strychnine is calculated to produce great and permanent advantage, in combination, of course, with other remedies suited to the particular exigencies of the case—for example: if the retina be weakened in consequence of diminished vigour of the system, remedies adapted to strengthen the system, and a removal of the cause enfeebling it, might be joined to the local

application of the remedy in question. But the power of the retina will not always return with the returning strength of the system. In such cases the strychnine is singularly valuable, producing, with wonderful rapidity, the restoration of the organ of vision. The strychnine given internally does not produce the same beneficial effect upon the retina, as when applied externally. The mode of using it is already before the profession." After having tried it in a variety of ways, and in different situations, Mr M. has not been able to discover a better method than that of blistering the skin above the eye brow, and after having carefully removed the cuticle, sprinkling the powder upon the raw surface, taking care to pass a spatula upon the part to secure the powder against removal and insure its absorption. The quantity with which Mr M. commences is the twelfth of a grain upon each side, daily augmenting the quantity as the patient is able to bear it, until it amounts to two-thirds of a grain upon each blistered surface. Its first effects are slight pain in the head, increased power of vision, and severe smarting pain of the part upon which it is applied. "Some patients, Mr M. remarks, cannot bear its application; others require great care, and a very gradual augmentation of the quantity to enable them to bear it; while others will admit of its application without experiencing any other uneasiness than what arises from its action upon the sore."

In reference to the cases in which the remedy in question would be injurious or useless, Mr Middlemore remarks, "if the amaurosis be dependent on any morbid condition of the brain; any alteration of the bony structure; any tumour or other substance pressing upon the optic nerve, the effect of former inflammation, such as opaque deposition or partial disorganization, the effusion of blood or morbid growths, the enlargement of the vitreous, or displacement of the crystalline humour, producing pressure upon the retina; a varicose state of vessels, as a consequence of distention,—so continued as to impair their tonic and elastic properties; inflammation or disease of those parts encased by, or anterior to the retina:—no benefit could be expected to result from the use of strychnine; but on the contrary, in many cases, material injury might succeed its employment."

The subject of the external application of strychnia in amaurosis has been taken up at Edinburgh, by Dr Thomas Stocker, physician to the Royal Infirmary of that city, and known to the profession as one of the signers of the *procès verbal* of the autopsic examination of Napoleon. Dr Stocker's remarks are inserted in the October number of the Edinburgh Medical and Surgical Journal. Dr S. claims priority in respect to the employment of strychnia in amaurosis. He regards the remedy "to act purely as a stimulant, either of the nervous matter of the nerves, or of their capillary system; and, therefore, to be successfully employed only in amaurotic cases which depend on paralysis of the optic nerve and retina; and in cases of congestive amaurosis from pressure from their parts, with loaded and inactive state of the minute vessels of the neurilematic envelope." He thinks, "that in such cases, its beneficial operation is considerably aided by the previous use of mercury, possibly, either by exciting the nervous system, by rousing the energy of the capillaries, or by increasing the powers of absorption, or by all three conjointly. Several of the individuals whose cases are detailed in his essay were attacked, he adds, with erysipelas, which strychnia seems prone to occasion; but they were invariably relieved, by simply rubbing about a drachm of mild ointment or cold cream over the diseased surface, every four hours. Nine cases are detailed—some were cured; but the greater number were only relieved."

Cases to the same effect, treated at the Royal Westminster Ophthalmic Hospital of London, in which full or partial relief has been obtained, will be found described in the sixth volume of the London Medical Gazette.

26. *Syphilis cured in an Infant by Mercurial Frictions, applied to a Goat that suckled it.*—Dr Vere Delisle lately communicated a case to the Academy of Medicine at Paris, in which a woman, three months after delivery, contracted a syphilitic disease, characterized by ulcerations on the inside of the labia, and a gonorrhoeal discharge. The child whom she suckled was soon affected with

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venereal pustules, and ulcerations round the anus. It was now made to suckle a goat; and the inside of the thighs of the animal having been shaved, two drachms of mercurial ointment were rubbed in every other day. The child was cured in a month.—*Archiv. Generales, and Lon. Med. Gaz.*

27. *Dropsy treated with Veratria.*—Dr Bardsley, whose "Hospital facts and observations" we have so often quoted, has tested the properties of veratria and colchicum, in dropsical complaints. The former substance, as is perhaps known to our readers, is obtained from *veratrum sabadilla*; and a few grains of the acetate have been found to destroy animals, when introduced into the stomach and intestinal canal. Feeling anxious to ascertain its effects upon the human body, Dr B. exhibited it in several cases. We take the following abstract of a case from the *Medico-Chirurgical Review* for October.

Hugh Cairns, aged thirty-nine, had been ill three months with ascites, and anasarca of the lower extremities, scanty urine, feeble pulse, and somewhat difficult respiration. Dr B. commenced with a quarter of a grain of veratria every four hours, which not acting on the bowels with energy, was augmented to half a grain, at the same intervals. It produced several watery motions daily, the swellings diminished, the dose was again augmented to a grain twice daily, and the patient was, in the course of a month, discharged cured.

Other cases to the same effect are cited; but although from a perusal of them it is plain that the remedy is not destitute of power in dropsical diseases, we are ready to conclude with Dr Johnson, that veratria is not likely to supersede our other hydropic medicines.

Dr Bardsley has likewise experimented with veratria and colchicum, in gout and rheumatism. He furnishes a table of twenty-four cases of that obstinate disease, which were treated by the former of these remedies, and the same number put under the influence of the latter. There does not appear to be much difference in the results.

28. *Importance of Diet in Urticaria.*—The London Medical Gazette for September 4, 1830, contains an interesting communication on this subject, by Dr Badgley. After stating that he has long been impressed with the opinion, that in the treatment of disease in England, there exists too generally, a most palpable neglect of the principles of hygiene, Mr B. describes a case of urticaria, in which the greatest success resulted from proper attention to diet.

The patient, a child two years old, would have been considered, Mr B. thinks, in the eyes of persons unacquainted with disease, as being exceedingly healthy; "perhaps even the very common epithet of his being the very picture of health," might have been deemed applicable to his appearance. But every one acquainted with disease would, he adds, "have seen at first glance, that the application of such a title would have been decidedly erroneous." The child was of a corpulent habit, and sanguine temperament; but his skin was dry, rough, and on his face it was marked by irregular streaks; his eyes were dull; the albuginea slightly tinged with yellow; his tongue was covered with a yellowish white fur towards the root—from the centre forwards, it was more white and moist; his breath was fetid; his respiration, however, was slightly hurried, from the presence of a little irritating cough, dependent, I conceived, upon the state of his stomach. His bowels were exceedingly irregular, having sometimes no evacuations for *two or three days* at a time, and when they occurred, the matter discharged was of an excessively fetid nature, clayey, and for the most part accompanied by the passage of much flatus. He had, also, frequent acid eructations; his appetite was described to be, generally speaking, good; his disposition lively; his temper remarkably good, except occasionally, when, from the irritation of the affection under which he laboured, he was rendered peevish and restless."

The eruption first made its appearance more than fourteen months previous. His diet, at that time, was totally unrestricted, and he was permitted to eat any thing he desired; and by the physicians who were called, no alteration in that respect was recommended to be made. The disease was at first attributed to dentition. It became at last very troublesome—the whole surface being covered,

especially a short time after the child was put to bed, with pimples, the bases of some of which were slightly inflamed. Mr B. recommended the adoption of an entirely different system of diet, and "strongly urged the necessity (not merely the propriety) of discontinuing the use of all vinous liquors, of vegetables in their green state, and soups, into the composition of which these entered; and of substituting farinaceous and light animal food. He was ordered to be put, three times a week, into a warm salt water bath, and occasionally alternating these with a bath of the nitro-muriatic acid. A dose of the hydrargyrum cum creta, with a laxative mixture, containing the tart. potass., carb. soda, and pulv. ipecac. were prescribed; and instead of increasing the cathartic power of the medicine, to meet the torpor which existed to a very great degree in the intestinal canal, this same mixture was continued until, by steady perseverance in its use, the bowels became regularly moved once, and sometimes twice every day. It was likewise suggested, that when he was taken out of the bath, his whole body, but especially his abdomen, after being dried, should be well rubbed with the hand, or a dry soft cloth. A fortnight had not elapsed, before I had the satisfaction to find, that a very great improvement had taken place in my little patient; and I am now able to state, that for the last three weeks he has been almost entirely free from a complaint, under the irritating effects of which he had laboured for fourteen months almost incessantly."

Mr B. remarks, that in requesting the insertion of this communication he has not been actuated by a view of attracting attention to the disease, which is of common occurrence, and when met by appropriate means is generally found sufficiently tractable; "but to the fact of the speedy change produced by having had recourse to those measures, which, we are instructed by the principles of therapeutics, are adapted to the particular affection."

29. Treatment of Puerperal Fever.—Among the most interesting articles that have recently appeared in the European periodical publications we do not hesitate to place in the foremost rank the *compte rendu* of the practice of M. Desormeaux in those cases of puerperal fever observed in 1829, at the hospital of *La Maternité*. This report is written by M. Tonnelle and inserted in successive numbers of the *Archives* (vols. 22 and 23). M. T. enters fully on the nature and characters of the disease, and dwells particularly on the effects obtained from different plans adopted for its treatment. For the following condensed view of this report we are indebted partly to the *Edinburgh Medical and Surgical Journal* and partly to the original essays themselves.

The more active means resorted to by M. Desormeaux were bloodletting, leeches, ipecacuanha and mercurial salivation. The subsidiary remedies were chiefly the warm bath and hip bath, laxatives, clysters, cinchona, cataplasms and emollient lotions to the uterus. A few words on each of these principal means is all we can conveniently present in this place.

In respect to blood-letting, M. Desormeaux found that it was often strikingly useful, or even imperatively required for subduing the reaction of the circulation in those cases in which the inflammation was of the active kind. But it is added, that although blood-letting had this effect in the early stage, it seldom subdued completely the local inflammation, and was always a remedy of questionable propriety, on account of the great rapidity with which the inflammatory stage was sometimes followed by typhoid symptoms, if it did not prove effectual. For these reasons, and also more particularly because local blood-letting, while it had all the constitutional effect desired, appeared likewise much more effectual in subduing the inflammation of the uterus and its appendages, he soon was induced to substitute in most instances evacuation by leeches for general blood-letting. Leeches were commonly applied to the belly to the amount of forty or fifty, the wounds being made to bleed by the hip bath, and afterwards a poultice. This was repeated sometimes twice or thrice, according to circumstances, even in thirty-six or forty-eight hours. When their effect was salutary, an immediate abatement or removal of pain took place, followed very speedily by copious perspiration. This remedy was of course available chiefly in the early stage of the disease, before suppuration had set in; but was also fre-

quently resorted to afterwards, as a remedy against subsidiary inflammation in the chest and elsewhere. The degree of success may be gathered from the following numerical statements. Of one hundred and sixty-five cases, eighty-two were treated by general or local blood-letting as the principal remedy; and of these sixty-three, or fully three-fourths recovered.

M. Desormeaux also employed, in the early stage of the disease, vomits of ipecacuanha, a remedy long ago resorted to in puerperal fever of the Hotel Dieu by Doucet and Doublet, and subsequently abandoned on account of the agitation produced in the abdominal viscera by the act of vomiting, and of the alleged absurdity and want of success of the practice. M. Desormeaux, who it would seem was a judicious practitioner, and a man of too much sense to allow himself to be led by theoretical notions to the abandonment of a remedy highly extolled in puerperal fever by very respectable authorities, determined to make trial of ipecacuanha. He soon found, that the first objection urged against emetics was rather a specious than a solid one, and that the second was not more substantial, deriving an apparent foundation solely from the propounders of it having neglected the influence of season on the utility of the remedies. He remarks that, on first using ipecacuanha as an emetic towards the end of 1828, he derived from it incontestable advantage,—that during the greater part of the subsequent year it was very seldom of any use, though never, so far as he could judge, injurious; that in September and October of that year, while the weather was cool and moist, and the epidemic at its worst, this remedy again became signally effectual; and towards the end of October, and for the remaining months of the year it was again inert. Among one hundred and sixty-five cases which M. Tonnelle has chosen for exemplifying the effects of remedies, forty were treated with ipecacuanha as the chief remedy; and of these thirty-two or four-fifths recovered.

This remedy was employed chiefly in the early stages—seldom oftener than once. Its action when salutary was generally followed by purging, especially when the vomiting was slight, and in every successful case by copious sweating, unless the purging was profuse. Commonly in a very few hours there was a marked amendment in the patient's state, and if this did not occur within the first twenty-four hours, the remedy was abandoned, and recourse was had to other measures.

M. Desormeaux and his pupil M. Tonnelle have satisfied themselves that the physician possesses, in *mercurial salivation*, a powerful remedy even in the worst cases where the disease assumes the typhoid variety, or in the suppurative stage of the inflammatory variety. Every physician knows that in such cases the issue is ordinarily fatal; and consequently will join M. T. in opinion, that a very moderate degree of success with any given remedy is sufficient evidence of its utility. Of forty-three cases in which mercury was used as the principal remedy, only fourteen or one-third recovered. Small, however, as this success may appear to some, it must be viewed as an important gain. Mercury was employed only when the former means were no longer available. It was used in the way of friction chiefly, two ounces of ointment being commonly rubbed, every twenty-four hours, into the skin of the abdomen and thighs, in portions of two drachms. In many of the cases where it was successful, the symptoms left no doubt that suppuration had taken place; and in some there is unequivocal evidence from the history of the cases that the veins were inflamed, nay that purulent deposits had taken place before the remedy could be brought into action. In all successful instances the operation of the remedy was attended with marked changes in the state of the principal disordered functions. The most common of these was profuse perspiration, followed by great abatement of pain. In many cases this effect was immediately preceded by abortive attempts at the establishment of pyalism, followed in a day or two by considerable pyalism. In other cases, profuse purging followed the use of the mercury. This, however, was not attended with exhaustion, but rather by a restoration of strength. Sometimes salivation, perspiration and purging occurred together in the same case. In some instances the mercurial action was attended with a gradual and rapid formation of a healthy purulent discharge from the uterus by the vagina.

The warm bath was used only in the commencement of the simple inflammatory cases, and when the skin was dry and hot. The hip bath was used in all cases and stages of the disease. Laxatives were seldom insisted on, and the mildest ones were resorted to. Oleaginous and farinaceous glysters were used as emollient applications. Poultices on the whole abdomen were invariably used, and always gave relief. Emollient injections into the uterus were constantly practised every four or six hours, and always with advantage. Blisters were often applied to the calves of the legs, as a stimulus, when the patient was sinking or in a state of stupor. Oplates were occasionally resorted to when the purging was too profuse, and bark was sometimes given to hasten convalescence.

30. *Effects of the contact of metallic rods in Catalepsy.*—Dr Sachse, physician at Ludwigslust, has published in the *Archiv. fuer Medic. Erfahr.* an account of a case of catalepsy occurring in a young female, in the cure of whom the metallic rods were employed with considerable success. Several trials were made, but without success, with silver. Gold produced some effects, though much less than iron. When, during the paroxysms of the disease, the Doctor passed successively the metallic rods on the extremities, whose muscles were spasmodically contracted, they became relaxed. The patient could then extend the limbs, the joints creaking at the same time very audibly. In this way Dr S. succeeded in abridging the paroxysms of the disease. Every time he placed the patient under the influence of the galvanic action of the metallic rods, she awoke from her trance; but this effort only was momentary, and she promptly fell again into a state of somnolency, which continued until the attack had subsided. This lasted about two hours, unless cut short by the aforesaid means. The action of the metals on the eyes presented remarkable phenomena. The eye lids were no sooner touched with the extremity of the iron rod, than they began to tremble; the pupil became contracted, and the eyes were slowly closed. A gold wire produced in the eyes a sensation of weakness, attended with a greater degree of sensibility, of which the patient complained during the whole day. This effect never followed the application of the iron rod; but the action of the latter metal on the mucous membrane of the nose was rather singular, from its violence. It gave rise every time to very acute pain, and to convulsions which aggravated the paroxysm. The same effects were produced by simply approaching the wire to these organs.

We are indebted for this article to the *Archives Générales* for July 1830.

31. *Effects of bleeding in Scarlatina.*—Dr Muhrbeck, in a paper contained in Hufeland's Journal, expresses the opinion that bleeding may suppress scarlatina for some time, but does not cure it. He cites the following case in support of his views. A healthy female child, six years old, was seized on the 16th of December 1828, with violent fever, swelling of the neck, pain in the throat, redness of the eyes, frequent vomiting and intense redness of face. A few spots of the same colour were observed on the chest and limbs. In a word, the child presented all the symptoms which announce an attack of scarlatina, which disease was at the time prevailing. Blood-letting to the amount of six ounces was resorted to, and a powder composed of proto-chloride of mercury, (calomel,) and nitrate of potash was administered internally. By these means an immediate stop was put to all the symptoms, the fever abated, the sore throat yielded, and at the end of six days the patient was allowed to leave her bed. Nevertheless she continued to experience uneasiness, her appetite did not return, and the child was peevish and morose, complaining at times of pain in the throat, at others of wandering pains in the limbs. These symptoms continued to manifest themselves until the 12th of January, when all the precursory signs of scarlatina reappeared with increased violence. The eruption broke out all over the body, and was attended with continued delirium. Bleeding and calomel were again had recourse to, leeches were applied to the head, and cold affusions were employed, but all to no avail. The disease became aggravated, and the little patient died on the 17th, being the sixth day since the relapse.—*Archiv. Générales, Juillet 1830.*

82. *On the employment of Galvanism in Hydrophobia.*—M. Pravaz, who is the inventor of an instrument intended to prevent the absorption of viruses in poisoned wounds, and who has proposed to substitute galvanism for cauterization in the treatment of such cases, has read before the Royal Academy of Medicine at Paris (on the 8d of August last) a memoir containing three additional facts in support of his opinion.

1. A bitch was bitten in the thorax by a dog affected with hydrophobia. The wound presented a surface of two square inches. Fifty-four hours after, and when the wound had already become dry, it was submitted for half an hour to the action of a galvanic apparatus of forty small pairs of plates. At first the animal experienced acute pain; but this soon subsided. A few drops of blood issued from the wound, an eschar of one line in thickness was formed, and fell off on the eleventh day. On the 16th the wound had entirely healed. The animal was preserved from hydrophobia.

2. Dr P. inoculated some of the saliva of the same hydrophobic dog in the two thighs of a healthy dog. Fifty-four hours after the wounds were cauterized with the pile; the eschars which formed fell off on the eighth day, the wounds healed on the twelfth, and the animal was preserved from an attack of the disease.

3. A dog was inoculated in the same manner as the preceding one, and with the same saliva. No means being taken to guard against the disease, it soon developed itself, and the dog died of hydrophobia on the tenth day.

From these experiments, M. P. concludes, 1. That since galvanism has operated successfully after a lapse of fifty-four hours, time sufficient is afforded in private practice for procuring a pile. 2. That as electrical currents operate at a distance, it is always useful to submit sinuous and deep wounds to the action of the pile, even after they have been cauterized. 3. That galvanism has, besides, the advantage of destroying, at a considerable depth, by a chemical action, the viruses, and to put a stop to absorption by occasioning a constriction of the capillary vessels.—*Archives Générales de Médecine, August 1830.*

83. *Chronic Dysentery cured by the Blue Pill and a Mucilaginous Diet.*—Dr Bard, of Troy, Vermont, reports in the July number of the Western Journal of the Medical and Physical Sciences, a case of chronic dysentery, cured by the blue pill and a mucilaginous diet—a plan recommended originally by Dr Pier-son of Canton, and subsequently in this Journal, and by Dr Mitchell of this city. The patient had been labouring under the disease for three years, with but slight and partial remissions in the winter months. "She was much emaciated; pulse quick and feeble; countenance sallow; skin dry and harsh; tongue slightly furred; appetite very bad, and great debility. There were generally from ten to fifteen dejections daily, slimy and purulent, streaked with blood; and sometimes pure blood was discharged. The abdomen was tender on pressure, with great pain and weakness in the loins, sacrum and hips, and the evacuation of the urine and feces appeared to be prevented by a peculiar painful sensation of muscular debility, distinct from the tenesmus."

Under those circumstances, the above mentioned plan was adopted, and in a short time proved successful.

We have already expressed our opinion on this practice (Vol. VII. of this Journal, pp. 180, 181). We may now add, without contradicting our former experience, that the mucilaginous diet would alone, in this case, have proved adequate to the cure, without the aid of the blue pill. Similar instances of dysentery, especially among inhabitants of warm regions, have fallen under our notice, and we have seldom, in those cases, found it necessary to resort to any other mode of practice,—aiding it, however, occasionally, by topical bleeding from the anus, or along the course of the descending colon, as well as by tepid baths, and slightly anodyne injections.

84. *On the employment of Rhus Toxicodendron in Paralysis.*—Dr John Eberle relates, in the Western Medical and Physical Journal, July 1830, a case of the successful employment of the *Rhus Toxicodendron*, (poison oak) in paralysis. This remedy, as Dr E. remarks, is by no means a novel, although at

present an almost wholly neglected one. Dufresnay, Kruger, Ely, Alderson, Horsefield and others, have adduced much evidence of its immediate powers in paralysis. Dr E. has himself seen another instance of its usefulness in this affection, and he states on the authority of Professor Osann, of Berlin, that in Germany, this medicine has within the last three or four years been employed with marked success in paralytic affections.

35. Treatment of Dysmenorrhœa.—In a short essay on the pathology and treatment of dysmenorrhœa, inserted in the Journal just quoted, the same physician, (Eberle), combats some of the views entertained on the subject by Dr Dewees; maintaining, for example, that the disease sometimes recurs without the formation of a pseudo membrane, and that when the latter is formed, the cause is to be sought for, not in a weak state of the uterus, as believed by Dr Dewees, but in a congested and irritated state of that organ. He regards this disease as frequently of a rheumatic character, stating that the tincture of guaiacum, so warmly recommended by Dr D., is, without doubt, entitled to considerable attention, as a remedial agent in this complaint; but that he has been frequently disappointed with its employment; and finally adds: "the remedy which I place most reliance in, is the extract of stramonium, or the tincture of the seed of this plant. I prescribed it at first, in the presumption of the rheumatic character of the disease, and I have had much reason to be satisfied with its effects."

36. Case of the Bite of a Rattlesnake, (*Crotalus durissus*, Linn.)—Dr Richard Harlan, of this city, has sent us the following relation of this case. The extreme danger to which the patient was exposed, in the present instance, and the success of the curative measures resorted to, appear to me to render it worthy of the notice of the profession.

On Monday, the 13th of September 1830, Daniel Steel, a showman of living animals, in this city, was severely bitten by a large male rattlesnake, immediately below and on the metacarpal joint of the index finger of the left hand: the accident occurred about four o'clock, P. M. on a warm day, whilst he incautiously seized the reptile by the neck, not so close to the head but that the animal was able to turn upon him. Immediately after the bite the blood flowed freely from both the fang-punctures: the parts in the immediate vicinity of the punctures became tumid and livid, notwithstanding the efforts of the patient at suction with his mouth—which faintness obliged him soon to relinquish. On my arrival, about half an hour after the accident, I found him extremely pale and faint, and was informed that he had fainted several times: the whole of the back of the hand was puffy and tumid, with infused non-coagulable blood, which appeared to have infiltrated from the vessels, and forced its way through the cellular tissue; a ligature had been previously applied on the wrist; another was now placed on the arm, the fore-arm having already commenced swelling.

The situation of the wound rendered the use of cups inapplicable, and the flow of blood was so rapid as to make their application inexpedient. The punctures were separated some distance from each other, which rendered it requisite to excise two large portions of integument, the incisions extending down to the tendinous fascia; the blood, which flowed freely after the operation, did not appear disposed to coagulate; cold water was now poured on the wounds, in a continued stream, from the mouth of a pitcher, held at a considerable elevation, and the swollen parts in the vicinity of the wounds were forcibly pressed, in order to expel the effused blood. The patient again became very faint, and was laid in a recumbent posture. The wounds were next washed with spirits of hartshorn, several doses of which were administered internally; but being now informed that the patient had drunk freely of sweet oil, the hartshorn was omitted, until the stomach should be evacuated by drinking warm water. A poultice of bread and water was next applied, to encourage the bleeding, and the patient put to bed. At ten P. M. I was sent for in haste; the patient was thought by attendants to be dying. The bleeding from the wounds had been extensive, the tumefaction had extended up to the arm, the inner and inferior portions of which

were discoloured by effused blood: the patient vomited incessantly; he complained of insatiable thirst, and drank cold water every few minutes: he had pain and stricture at the pit of the stomach, great restlessness and anxiety, cold skin, with the exception of the wounded arm, which was very painful: add to which, there existed delirium, singultus, difficulty of breathing, and pulse at the wrist scarcely perceptible. The poultice, bandages, and all ligatures, were immediately removed; the back of the hand was blacker and more swollen, and the skin of the fore-arm was hot and tense. As a substitute for the poultice, and in order to suppress the bleeding, which appeared to endanger the life of the patient by the debility it occasioned, large flat pieces of fresh meat, were bound on the wounds, hand, and fore-arm; before this operation was completed, the patient exclaimed, "that feels comfortable." The indications arising from the present symptoms were: 1st, to allay irritation and thirst; 2d, to arrest the vomiting; 3d, to procure sleep, if possible; and 4th, to excite the sanguineous system to resist the depressing power of the poison, which had so emphatically manifested itself on the system in general.

A mustard plaster was directed to be applied to the pit of the stomach; sixty drops of laudanum to be administered every half hour, until the vomiting be arrested; after which the following bolus, to be taken every two hours until sleep should be induced: *R. Pulv. opii, six grains. Pulv. gum. camph. eighteen grains. Pulv. carb. ammonii, thirty grains. M. ft. in three boluses. Sig. as directed.* Of these pills he took three before the effects desired were manifested. On the morning of the second day his pulse was raised; the extreme thirst and irritability of the stomach were allayed, and reaction of the system in several respects was manifested, but the tumefaction of the arm had extended to the shoulder, with broad black streaks up to the axilla: stricture at the breast, and great local pain were now the chief complaints. The application of raw meat was renewed, as it afforded comfort to the patient, and appeared to reduce the swelling of the hand, and, by pressure, had nearly suppressed the hemorrhage. In order to allay the pain and tension of the whole arm, he was directed to expose it naked to the *fumes of burnt wool*, in a convenient apparatus; which was attended by such marked alleviation of symptoms, that the patient himself was desirous to have the operation frequently repeated, and continued for two or three days; the swelling always diminishing after each application: it caused the arm to perspire profusely, and covered it with a blackish soot impregnated with ammonia, resulting from the decomposition of the wool. During the intervals, the arm was rubbed with volatile liniment. The raw meat having become offensive from its disposition to ferment and putrefy, was omitted, and flaxseed poultices substituted; the anodyne boluses were continued in half doses through the day, and the quantity increased at night to produce sleep. The system again became depressed, and appeared to struggle with the effects of the poison; as the patient had been somewhat addicted to intemperance, he was allowed milk-punch to support his strength. On the third day, a greater degree of reaction was obvious; the bowels were evacuated by castor oil; the dose of the anodyne was diminished, and by carefully nursing the arm, in less than a week, supuration supervened, and the patient was able to leave his bed.

Remarks. In the case above detailed, the resort to suction by the mouth, and the application of cups being prevented by uncontrollable circumstances, and the local and constitutional symptoms being already in some degree developed, there was no alternative but to resort to those general principles of treatment, which, when properly and timely administered, will seldom fail of success; there was no "specific" at hand, nor do I place any confidence in the thousand "infallible remedies" which are offered in such cases. (The reader is referred to a recent number of the *Trans. of the Amer. Philos. Soc.* for observations on several of these remedies, and a detail of *experiments* with one of the most noted of these specifics, made by the author in 1828.)

Of the many instances of wounds from the bite of the rattlesnake, perhaps not more than one out of ten would prove mortal if left to nature; and perhaps not more than one out of five cases would be followed by constitutional symptoms. It has been also satisfactorily ascertained, that of the many hundred men and

animals bitten by rabid animals, not more than one case out of twenty is followed by *hydrophobia*: a fact, in itself, sufficient to account for the origin of the innumerable "specifics" in both the cases under consideration. Nevertheless, several instances of death from the bite of the rattlesnake, in adult men, have unquestionably occurred within my own recollection.

V. MEDICAL JURISPRUDENCE.

37. A case of Poisoning from Arsenious Acid, which was detected in the Stomach after death.—Communicated for this Journal, by Wilmer Worthington, M.D. of Westchester, Penn. 1830.

At our November term, of the present year, Edward Williams, a coloured man, was tried and convicted for the murder of his wife, Sarah Williams, by administering to her two drachms of arsenious acid. The following is a brief account of the scientific part of the evidence delivered in the course of the trial, by the physicians, who made a post mortem examination of the body, together with a chemical analysis of the contents of the stomach. Should you deem it worthy a place in your excellent Journal, it is at your disposal.

The deceased, aged about thirty-five years, died suddenly, on the 29th of May last, after taking a white powder in water, which her husband represented as being *magnesia*. She expired in about four or five hours after swallowing it, complaining of great thirst, intense burning of the stomach, sickness and vomiting of a bloody fluid. She was disinterred about twenty-four hours after interment, and the body examined by several physicians, in the presence of a coroner's inquest. The stomach and duodenum appeared inflamed; the liver, heart, lungs, brain, and uterus were all apparently in a healthy condition. The stomach was carefully removed, after passing a ligature round each extremity, and conveyed to my office; where, on the following day, it was opened, in the presence of Drs Darlington, Thomas, Parrish, Cloud, Brinton, and myself. It contained about ten or twelve ounces of a bloody fluid, which was carefully preserved for examination. The inner coat of the stomach was then washed in rain water, which was also preserved. Extensive inflammation occupied the whole surface of its interior coat; being greatest, however, towards its cardiac extremity. Small whitish particles, resembling a powder, were adhering to portions of its surface, and particularly that part where inflammation was greatest.

Portions of the contents of the stomach were tested with nitrate of silver and sulphate of copper, after boiling with a little salts of tartar, in order to form an arsenite of potash. The former caused a precipitate of a white, cloudy appearance, and the latter, of a bluish green—neither of them presenting the true characteristics of arsenite of silver, or the arsenite of copper.

The remaining portion of the contents of the stomach were evaporated to dryness, and afterwards covered with nitric acid, and again evaporated at a heat below the boiling point. A portion of the residuum thus obtained, was mingled with powdered charcoal, and sublimed in a glass tube. By this means, metallic arsenic was procured in considerable quantity. Several different portions of the contents which had been subjected to the action of the nitric acid, were sublimed in a similar manner, and in every instance metallic arsenic was obtained. By burning it upon heated charcoal, or a red-hot iron, white fumes were given off, accompanied by the alliaceous odour. Professor Hare, to whom we sent a part of the contents of the stomach, also succeeded in procuring metallic arsenic.

I might observe, that several other tests were applied by us, but the only one which rendered in any way a satisfactory result, was the sublimation of the metal. By this means we succeeded in obtaining it in such quantities, as to satisfy us beyond a doubt of its presence. The fluid tests, which were applied previous to the contents being subjected to the action of the nitric acid, probably failed in consequence of the presence of animal or vegetable matter, either of which,

we are told, will destroy the accuracy of their operation. Why the ammoniacal nitrate of silver failed to produce the appropriate precipitate with the arsenious acid obtained by treating the contents with nitric acid, I am unable to say.

Judge Darlington charged the jury upon the three following points: 1. Was the death occasioned by taking arsenic on the 29th of May? 2. Who administered the poison? 3. Was the poison administered by mistake? These questions being sufficiently settled by the evidence, the jury, after withdrawing a short time, returned with a verdict of "*guilty of murder in the first degree.*"

38. *Accusation of Poisoning with Arsenic and contradictory testimony of Medico-Legal Jurists.*—We had intended, but for the pressure of other matters, laying an account of this interesting case before our readers in our last number. The details are given in full in a number of the *Annales d'Hygiène Publique et de Médecine Légale*. The essential features of the case are as follows:

Some suspicion of poisoning having been entertained, it was determined to disinter the subject, who had been a man advanced in life, seventy-five years of age, of a robust constitution, but subject to the asthma, and having a hernia on the right side. He had been, moreover, addicted to the use of ardent spirits, although, in despite of his errors in this respect, he apparently enjoyed good health until the evening before his death. On Friday, the 29th of May, he was suddenly seized with vomiting, to attacks of which, according to the testimony of his daughter and son-in-law, he had been subject. The present one lasted four hours, during which time he threw up a great quantity of matter, the precise nature of which could not be well ascertained by the reporters. On Saturday morning the vomiting ceased, but great prostration gradually succeeded, the breathing became oppressed, and finally death supervened between twelve and one o'clock in the day. The body was buried on the following day, and disinterred on Friday, June 5th. The medical jurists called to superintend the disinterment and make the requisite examinations, report the composition of the coffin, the kind and appearance of the envelopes of the corpse, and on exposing the face, were assured by persons present, that it was that of the person who, it was suspected, had been poisoned. We do not deem it necessary, for the understanding of the case, to repeat, after the reporters, all the peculiarities of the external habit of the body. There was no contusion, wound, or fracture, nor any sign of external violence. The abdomen was slightly meteorized. On opening the skull and incising the membranes of the brain, some sero-sanguinolent fluid escaped, which was regarded as the product of softening of the parts, rather than of any morbid state. The cerebrum and cerebellum were of a natural texture and appearance. The lungs were healthy and without adhesions, as was also the pericardium, which latter contained about two ounces and a half of fluid of a yellowish colour. The heart was empty of blood, some slight indurations were perceptible on its valves and at the beginning of the aorta. By an incision along the neck, the larynx, and pharynx, and fauces were exhibited and found to be clear of any marks of inflammation.

On exposing the contents of the *abdomen*, the mass of intestines, viewed externally, presented no trace of putrefaction or of any notable organic alteration. They were sensibly distended with gas. The inguinal hernia was soon discovered; it consisted of a portion of small intestine, externally of a deep red; the hernial sac was natural and exhibited no signs of strangulation. The stomach seemed to be filled with gas, its external face presented a rosy tint at its great curvature and at the fundus of the organ.

The better to collect the matters presumed to be in the stomach, ligatures were applied around its superior or cardiac extremity, and at its pyloric end. After this it was detached and examined apart. Its cavity was found to contain a small quantity of a fluid of a dirty white colour, in which was suspended some thick mucus, and amounting to about an ounce and a half. The internal membrane was covered with a mucous layer, tolerably thick and opaque. The texture of the membrane was not altered, only a deeply red tint was manifest at its great curvature, corresponding with the rosy colour observed at the external surface. In some places it was somewhat thin. No foreign body was observable in the

cavity. The œsophagus had no signs of inflammation; its internal membrane was of a natural colour.

The internal surface of the intestines showed here and there circumscribed spots of a brownish hue, but without any erosion or disorganization. They were more especially evident in the duodenal portion, in which the colour was still darker. For the most part the mucous membrane displayed a morbid softness, a condition of things particularly observable in the hernial portion of the intestines, and united with a deep red wine colour. No foreign body was seen in the intestinal cavity. The matters which it contained were carefully collected, as in the case of the stomach; they were of a greenish colour and emitted a rather strong odour.

The liver was tolerably voluminous and gorged with blood: it was of a mottled green on its external surface: the gall-bladder contained a small quantity of liquid of a deep green colour. The spleen was gorged with blood; the kidneys and bladder were in a natural condition.

The contents of the stomach and intestines were put, separately, in flasks with ground stoppers, and the stomach itself was put into a jar filled with weak alcohol. The seal of the justice of the place was then placed upon all these vessels, and all were carried to D. to be subjected to suitable processes. Before the examination of the matters thus transported was renewed, the reporters washed the stomach repeatedly in distilled water. By these washings, the internal membrane, having been entirely cleared of all the mucus which lined it, displayed more clearly the red colour at its great curvature. In some places the internal membrane evidently exhibited a morbid thinness, and in others small and nearly circular erosions. It was also easy for the reporters to distinguish on this membrane, chiefly in the parts which were the reddest, many particles of a sulphur yellow colour, of the size of a large pin's point. Examined through a microscope, these small particles, evidently consisting of a foreign matter, appeared to be incrustated as it were in the thickness of the membrane.

By means of a small pair of pincers, two of these particles were taken up; the space which they left was hollow, and resembled ulcerations, the sides of which were also of a yellow colour. These particles, solid and of a shining appearance, broke with the pressure of the forceps in causing a kind of erepitus. Thrown on heated charcoal, they burned with a white vapour, which was perceptibly condensed on the extremity of a glass tube, and which diffused a decided odour of garlic. This was a guide to the steps which we were next to take, say the reporters.

A piece of stomach on which two of the yellow particles were most apparent, having been subjected to a current of sulphuretted hydrogen gas, underwent no alteration, any more than the particles themselves.

A portion of the stomach exposed to the open air, became dry, and the yellow particles were, in consequence, more perceptible and easy of detachment. They presented the same characters as those antecedently mentioned; and two of them having been put on live coal, gave out, as before, a distinct smell of garlic.

Some of the particles boiled with distilled water became white, and imparted to this fluid the property of converting the ammoniuret of copper and the ammoniacal sulphate of copper into green. Following the process adopted by Mr Hume, one of the particles thus whitened by distilled water was, when yet wet, placed on white paper beside a drop of the ammoniacal nitrate of silver, and on joining together the two portions of paper, the white particle became of a pale yellow, with a reddish areola, which on exposure to the light passed to a brown.

A portion of the stomach, thus dried, was scraped with a penknife, in order to separate numerous small yellow particles, which were seen in it, but which, on account of their extreme tenuity and adhesion, could not well be obtained separately. This part having been triturated with potash purified by alcohol, the points seemed to be dissolved, and passed to a brownish yellow. A drop of distilled water added to this mixture gave it a brownish tint, without the membranous part being dissolved. This liquid when decanted appeared of a weak fawn colour; tested with ammoniacal sulphate of copper it became green; the ammoniuret of copper acted more decidedly, and gave a more marked green colour.

Saturated with hydrochloric acid, this liquid was slightly turbid, and deposited cloudy floculi of a pale yellow colour, which were deposited at the bottom of the small capsule. This experiment repeated with liquid ammonia, gave a more decided yellow colour. Owing to the small quantity of these particles, it was impossible for the reporters to treat them with potass in a glass tube, any more than the slight precipitates, which they were unable to collect.

The washings of the stomach. This water, a little turbid, when carefully decanted, left at the bottom of a porcelain cup two yellow portions, having the same character and exhibiting the same changes with reagents as the particles before mentioned.

The decanted fluid produced no change on the ammoniuret of copper, or on the ammoniacal sulphate of copper; it reddened the tincture of turnsol and converted into green the syrup of violets.

Nitrate of silver formed with it a precipitated magma, insoluble in nitric acid; filtered and a drop of the ammoniuret of copper added, it underwent no change; reduced by evaporation to two-thirds and tried by reagents formerly had recourse to, the results were nearly identical; reduced to the consistence of extract and treated with cold alcohol, it became of a coffee coloured brown, leaving at the bottom of the vessel a gummy matter which dissolved in distilled water. This liquid then put on a filter, passed through of a clear coffee colour, and acted with chemical agents as on preceding trials. The alcohol, in which the stomach had been kept, was also treated by the same means as the washings of the stomach, but gave no result.

Mucous matter in the interior of the stomach. The various ~~exposures~~ ^{tests} and tests to which this mucus was subjected were not productive of any peculiarities. *The matter collected in the intestines* was of the consistence of syrup and of a reddish olive colour. It separated into two parts by rest, and allowed the deposit of dark particles, and some of a yellow colour, similar to those found on the internal surface of the stomach.

A portion of this matter having been diluted in distilled water, and then poured on a filter, there were deposited on it mucous floculi, in the midst of which could be distinguished through the microscope, and even with the naked eye, numerous small yellow points, having the same external characters as those precedingly observed. The fluid obtained by this filtration was very clear and of a yellowish colour; it reddened tincture of turnsol, converted syrup of violets into green, reddened the starched and ioduretted paper, and finally destroyed its colour.

Subjected to a current of sulphuretted hydrogen gas, it was rendered of a milky colour and became of a dirty white. The ammoniuret of copper, as well as the ammoniacal sulphate of copper, became, on mixing with it, green. One part of the filtered liquor, on being heated, was coagulated and furnished a large quantity of albumen, which was separated by filtration. On being then slowly evaporated until one half had disappeared, the most marked effects were exhibited with the reagents of the salts of copper, which gave a most intense green colour.

In order to remove the yellow colour of the filtered fluid, and fearing that with the addition of the blue, it had been the cause of the green colour, the reporters evaporated a part to the consistence of an extract, in which was introduced a small quantity of nitrate of potass. It was then heated in a crucible into complete calcination. By this means, a powder of a cindery colour was obtained, which, with distilled water, gave a colourless transparent fluid, becoming, on the addition of the salts of copper, of a very sensible green, and agreeable to the eye.

The nitrate of silver produced an abundant precipitate, of a dirty white, insoluble in nitric acid, by which it was rendered of a deeper colour. On separating the muriate of silver by the aid of a filter, the liquid passed through transparent and almost colourless; a drop of ammonia being added, there was formed on its surface a scum of a lemon colour, which finally extended over the whole glass, accompanied by the formation of slight clouds; exposed to light, these

clouds were converted into a brown, but without the colour of the liquid being altered.

As it was impossible to seize on the small particles visible through the microscope, in the matters which remained on the filter, they were dried, in the hope that then the particles could be removed with the same facility as they were from the stomach; but unfortunately, the whole seemed mixed up, and the object of search was no longer visible. The following experiment was then made, and repeated three times. A piece of the filter holding the matter, well dried, having been inflamed and plunged into a receiver filled with oxygen gas, burnt in it with a white flame, and furnished a light vapour of the same colour, which was partially condensed into small laminae with a yellow lustre. The bottom of the receiver contained a small quantity of a straw coloured liquid, which was applied round the sides of the vessel, by means of a tube used to detach the laminae.

This liquid having been added to the reagents of copper, was changed to a green, as in the preceding experiments. A drop of it placed near a drop of the ammoniacal nitrate of silver gave a reddish yellow colour.

On summing up these experiments, are we, say the reporters, able to decide on the question, whether or not there was poisoning in this case? "Certainly, if we only have regard to the post mortem alterations, they alone would not furnish us with the means of resolving the question, since these lesions are often found in other circumstances, where there is no poisoning. But the yellow particles found in the stomach, and in the contents of the intestines, merit special attention. Hence, the results furnished by the ammoniacal sulphate of copper, the ammoniuret of copper, the nitrate of silver poured into the liquid, and ammonia added, the action, though feeble, of sulphuretted hydrogen gas, and especially the white vapour accompanied by a sensible smell of garlic, when one of the particles was put on burning coals: all these results give us ground for believing, without our being able to positively affirm, that the foreign matter found in the stomach and intestines presents a strong analogy to an arsenical compound; that this compound, by its colour, consistence, and crepitus on pressure, seems most to resemble the yellow sulphuret of arsenic or orpiment. Now, this compound, like all the others in which arsenic enters, possesses the poisonous property of this dangerous metal, whether it be employed internally or externally; hence, taken into the stomach, it produces alarming effects, and may cause death."

We have been thus minute in describing the various processes had recourse to in this case by the reporters of it, both in order to do them justice on the score of patience and labour, and for the better understanding of a counter report made by MM. Rostan, Hospital Physician, Marc, member of the Council of Health, Orfila, professor of chemistry in the Faculty of Medicine of Paris, and Barruel, chief of the chemical operations of the Faculty. Our readers, after having perused the above details, and followed the critical observations on them and the experiments made by the gentlemen last named, will see all the difficulties of the task of analysis in a question like the present, and will, we venture to say, be better informed on the subject, and better prepared to pursue, if need be, inquiries for themselves, than by studying the most elaborate set essay.

We have not room for the counter report in this number. It is sufficient to say, that it lays great stress, in one of the closing paragraphs, on the propriety and necessity of that capital and convincing experiment being made, which would consist in a reduction of the small yellow particles into metallic arsenic.

VI. MATERIA MEDICA AND PHARMACY.

39. *Ergot possessed of the power of arresting hemorrhages.*—Dr Spalagani has published, in the *Annali Universali di Medicina* for March 1830, a consistent
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derable number of cases of hemorrhage, in which he employed the ergot with success. These are noticed in the June number of the *Revue Médicale*, to which we are indebted for our information. The benefit of the remedy is not confined to any one species of hemorrhage. It has been found effectual in uterine hemorrhage, in hæmoptysis, in epistaxis, and in hæmatemesis. Dr Spaignani recommends that it should be given in divided doses, to the amount of at least twenty-four grains in the course of the day. In a girl, twelve years old, affected with hæmoptysis, he increased the dose to the amount of two drachms and a half in the twenty-four hours. The cure was, in some instances, almost immediate; in others, was protracted for several days. The author attributes its efficacy to a depressing counter-stimulant agency; and considers it as exercising this action especially upon the extreme vessels. In accordance with this opinion, he employs it also in sanguineous congestions, and has found it useful in those of the uterus. It appears to us that an explanation, more in accordance with the known action of the medicine in producing uterine contraction, would be, that it occasions contraction also in the capillaries, and thus closes the bleeding orifices.

40. *Polygala Senega*.—Several analyses of the root of this plant have been made by European chemists, which have been published in this country. The latest is by M. Folchi, an Italian professor, who found, among other ingredients in the root, a peculiar acrid principle, in which he believes its virtues to reside. We notice the fact, in order to introduce to our readers the following observations upon this substance, by Dr Folchi, which we find in the *Revue Médicale*, extracted from the *Giornale Arcadico di Roma*, A.D. 1830.

"This matter is in the form of shining plates, of a straw colour. When taken into the mouth, it appears at first insipid, but does not fail, when the saliva is swallowed, to produce in the fauces an acrid or burning sensation, which continues for some time. It does not melt when placed upon platinum strongly heated; but gradually blackens, and in the end is carbonized. It is not sensibly dissolved in distilled water, and is but slightly soluble in cold alcohol; but is readily soluble in this liquid when boiling. A solution of potassa attacks it slightly: liquid ammonia acts more strongly upon it."

We have seen no account of the mode of extracting this principle. The results of the several analyses of the root, which we notice above, may be seen, by referring to a paper on the *Polygala Senega*, in the July number of the *Journal of the Philadelphia College of Pharmacy*.

41. *Effects of Colchicum upon the Urinary Secretion, from a paper by Dr Kuhn, contained in the Revue Médicale for July 1830*.—"One of the most remarkable effects of colchicum upon the urinary secretion of persons affected with arthritis or gout, is that which was observed by M. Chelius, and recorded in the *Annales Cliniques* of Heidelberg, Vol. III, p. 345. The professor of Heidelberg has found, that while patients with this complaint make use of colchicum, their urine undergoes changes, which consist in a striking increase of the proportion of uric acid. The following are the results of an examination of the urine of a patient affected with gouty swellings in several of his joints, especially in his knees, so that he was wholly unable to move. Before the employment of colchicum, the uric acid contained in his urine, as well in the free state as combined with ammonia, was 0.069; on the fourth day of the employment of the medicine, it was 0.076; on the eighth day, 0.091; and on the twelfth, 0.112; so that the amount of the acid was almost doubled in a period of twelve days. Similar results were obtained by M. Chelius, in many cases of the same nature, in which the urine was analyzed.

"These results are very important, as they enable us to understand how colchicum produces so many wonderful cures of gout: is it not, in fact, by eliminating from the animal economy, the excess of uric acid, which, in this complaint, forms the chalky concretions of the joints. I well remember having heard M. Lobstein say, long before the publication of the fact observed by M.

Chelius, that he had succeeded in dissipating, by the aid of colchicum, arthritic concretions, which had resulted from inveterate rheumatism."

We agree with the author in considering the fact above related of some importance, but are unwilling to exclude from our explanation of the curative influence of colchicum in gout and rheumatism—the narcotic influence, as well as the revulsive power of that highly valuable medicine.

42. Chloride of Lime.—This chemical compound has been employed as a medicine with some success, by the physicians of France, Italy and Germany. Dr Lima of Bergamo, and Dr Gohier of Paris, have found it highly useful in obstinate scrofula; and Dr Græfe, of Berlin, has recently tried it with advantage in gonorrhea. The last mentioned physician prescribes it in the form of an emulsion, composed of a drachm of chloride of lime; seven ounces of almond emulsion, and an ounce of syrup. The dose of this mixture is a table-spoonful, containing about four grains of the chloride, to be repeated every three hours. Three or four portions are usually sufficient to effect a cure. The medicine, at first, usually excites an increased flow of urine, with irritation of the urethra; but these symptoms soon disappear, and the discharge diminishes with them.—*Revue Médicale*, July 1830.

43. Effects of Medicines upon the System in Health.—Professor Jærg, of Leipsic, assisted by a society of twenty-seven members, has undertaken to determine with precision the effects of medicines upon the system in health. Having detailed the effects produced upon different individuals, by different doses of a medicine, he deduces its general mode of action. The following are his conclusions in relation to the substances mentioned.

Water of cherry-laurel. The preparation with which he experimented, was made by distilling three pounds of liquid from a mixture of one pound of the fresh leaves, three ounces of alcohol, and six pounds of water. The effects of the medicine are—an almost immediate excitement of the encephalon and nerves, comparable to that produced by an electrical discharge; pains within the brain, especially about the region of the optic nerves; heaviness of the head and of the whole body, followed by diminution of consciousness, diminution of the pulse, lassitude, disposition to sleep, general weakness, tickling of the larynx, increase of the mucous secretion in the trachea, cough, dryness of the mouth. These effects are more or less intense, according to the peculiarities of individuals: with some, four times as much is requisite as with others, to produce a given result. In small doses, the medicine continues to act only for two, three, or four hours; in large doses, for six, eight, or twelve hours; but the irritation of the larynx, and the increase of mucous secretion in the trachea, last sometimes many days.

Valerian. The infusion was employed in the quantity of four ounces containing six drachms of the root, and the powder in the dose of two drachms in one ounce of fresh water. It moderately excites the cerebral and digestive organs. Its first effect is to render the mind serene, gay, disposed to exertion: at the same time it produces determination to the head, with a sense of weight and pain in this part. By its action upon the alimentary canal, it occasions eructations, a sense of fulness in the stomach, want of appetite, tumbling in the bowels, griping, tenesmus, flatulence, and frequently alvine evacuations rather hard than liquid. These effects are accompanied with nausea, and increase of the biliary secretion. Often, however, it produces not the slightest apparent effect, though administered in large doses. Sometimes it acts only upon the brain, at others only upon the digestive tube. It is more apt to take the former direction when given in infusion; the latter, in the form of powder. Small doses prolong this action for four hours, moderate doses for six hours, and large doses from eight to twelve hours.

Digitalis. From a quarter of a grain to three grains of this medicine was taken in powder, in a spoonful of water, with or without magnesia. It primarily excites the sensitive, digestive, and genito-urinary organs, and secondarily depresses the activity of the circulation, as the following symptoms evince:—in-

toxication, heaviness of head, vertigo, dull pain in the encephalon, increased heat in the face, obscurity of vision, a sense of heat and scratching in the pharynx and œsophagus, extending sometimes to the larynx and trachea, and giving rise to hoarseness, weight and gipping in the stomach and bowels, increased or diminished appetite, expulsion of flatus, frequent stools, &c.; increase of urine, which is sometimes clearer than in the healthy state, sometimes of a deeper colour, sometimes natural; erections of the penis, pollutions, sensations analogous to those which precede the appearance of the menses; augmented temperature of the external and internal parts of generation, phlogosis of the same parts, if the doses are too large or too frequently repeated; small or feeble pulse; depression of the activity of the vascular system after the medicine has produced its excitant effects. The decoction, infusion, and tincture of digitalis are less energetic than the powder. The dose is from a quarter of a grain to a grain. Its action is prolonged from twelve to twenty-four, or even forty-eight hours.—*Revue Medicale*, July 1830.

44. *Sinapisms*.—Writers on the materia medica and practice of medicine are apt to overlook matters which they deem familiar to every tyro in the profession; and the student, unable to gain any other knowledge on the subjects with which he is thus supposed to be familiar than what he gleanes from casual observation and the incidental conversation of others, is left to adopt inaccurate notions, which subsequent experience is not always sufficient to correct. The subject of mustard plasters is one of those which has not been deemed worthy of accurate investigation, as every one is supposed to be acquainted as if by intuition with so simple a matter. Nevertheless, if the experiments of MM. Troupeau and Blanc, who have inserted an article on sinapisms in the September number of the *Archives Generales*, are to be relied on, even some of the older members of the profession will find that they have something to learn on the subject. We give the results, as stated by these physicians, without entering into a minute account of their experiments, which appear to have been carefully conducted.

1. The flower of black mustard, fresh ground, is not more energetic than that which has been ground for five or six months, and kept wrapped up in paper in a damp cupboard.

2. A sinapism prepared with warm water acts rather more quickly than a sinapism prepared with cold water; but after a few minutes the difference ceases to be discoverable.

3. Mustard mixed with water, acts with much greater energy than when mixed with ordinary vinegar, or with acetic acid much diluted: and even with concentrated acetic acid it acts less energetically than with water alone, although the acetic acid in this state, if applied to the skin by means of a sponge or mixed up with some inert powder, as saw-dust, is a much more powerful irritant than mustard itself, producing much inflammation of the skin in the course of three minutes: so that vinegar mitigates the action of sinapisms, and mustard in its turn diminishes the irritating property of acetic acid. One experiment repeated several times upon different individuals, with the same result in each instance, led to the following conclusion, that good mustard mixed with water produces at the end of six minutes as much pain as the same mustard made into a cataplasm with vinegar at the end of fifty minutes: and sinapisms made with equal parts of water and concentrated acetic acid did not excite the least smarting sensation, though left forty-five minutes in contact with the skin. Instead, therefore, of expecting greater energy from a mustard plaster made with vinegar, we may now direct this addition as a diluent, with the same view that we order rye meal to be added to the sinapism.

But another very singular fact is, that English mustard, such as is used at the table in Paris, was found to act in the same way precisely, whether mixed with water or vinegar. This difference in the result could not have arisen from the use of inactive mustard in the first instance; for the sinapism made with it excited severe pain in the course of ten minutes. Is it possible that the black mustard, which was employed by the experimenters, contains an irritating principle capa-

ble of neutralizing and being neutralized by acetic acid; while another variety, perhaps the white, depends for its activity on a principle having different affinities? This is a question worthy of investigation.

4. Another unexpected result was, that the sinapisms prepared with alcohol were less energetic even than those with vinegar. It will be observed that the authors allude to the pure spirit; as in the ordinary state of distilled spirits, which contains about fifty per cent of water, we know that it forms a very active plaster. The inference is that the irritating principle of the black mustard is insoluble in pure alcohol.

5. Sinapisms, if made with good mustard, can seldom be supported longer than three-quarters of an hour, unless sensibility is diminished by cerebral or nervous disorder; and even then the cataplasm should not be allowed to remain more than an hour in contact with the skin; for though it may be borne many hours, yet if the system react, very severe local inflammation follows, which frequently ends in gangrene, and may even destroy the patient. We can cordially unite in this caution, as we have witnessed very unpleasant effects from sinapisms which were applied to the ankles of a female insensible from the influence of laudanum, and allowed to remain for two or three hours. No immediate effect was produced, but reaction of the system was attended with severe inflammation in the limbs, which terminated in obstinate ulceration.

45. *Salicine*.—We have before given some account of the preparation and febrifuge properties of this substance. At a meeting of the Royal Academy of Sciences of Paris, August 2d, 1830, an extract of a letter from M. Peschier, a skilful chemist of Geneva, was read, giving an account of a more perfect method of extracting the principle, which we shall detail, with the hope that some of our pharmacutists may put it in practice upon the barks of our own willows, and give the medical profession here an opportunity of testing its virtues. M. Peschier experimented on various species of the willows, with the object of ascertaining from which the salicine might be most cheaply obtained. The *salix alba*, *S. hastata*, and *S. precox* afforded very little that was susceptible of crystallization. The *S. monandra*, a variety of the *S. helix*, yielded to M. Peschier two drachms to the pound of dried bark, while M. Leroux obtained an ounce: but the former used the bark of branches scarcely a year old, while that with which the latter operated was three or four years old. M. Peschier found the bark of the *salix incana* somewhat richer than the preceding; but it yields the salicine with greater difficulty. Upon the whole, it appears that among the willows tried in France, the *S. helix* is to be preferred. Of the species above mentioned, we believe that the *S. alba* is the only one which has been introduced into the United States. The Journals state that this is the species from which Fontana and Rigatelli procured their salicine.

The following is the method recommended by M. Peschier. The bark is bruised and boiled in water for an hour or two, and the decoction forcibly expressed. To this the solution of sub-acetate of lead is added as long as it affords any precipitate. The liquor is then filtered, and heated to ebullition, a sufficient quantity of carbonate of lime being added to decompose the excess of acetate of lead, and saturate the acetic acid. After the liquid has become clear, it is decanted from the precipitated matter, which is washed twice or three times; the liquors are then united, filtered, and evaporated to the consistence of an extract. This product, while still hot, is submitted to pressure between leaves of blotting paper; and having thus remained for some hours, is treated with alcohol of 34° Baumé. The alcoholic solution is filtered, distilled so as to give over about one third of the menstruum, and afterwards carefully evaporated. The salicine is obtained in crystals of a pure pearly whiteness.

The physicians of Geneva have administered the salicine obtained by M. Peschier, to many fever patients with the greatest success.—*Archives Générales*, Sep. 1830.

The following chemical account of salicine, by MM. Jules Gay-Lussac and J. Pelouze, is taken from the *Journal de Chimie Médicale* for September 1830. Salicine, when pure, is perfectly white, and is crystallized in the form of prismatic

needles. Its taste is very bitter, and has something of the peculiar flavour of willow bark. It is soluble in about eighteen parts of water, at 57° F., is much more soluble at a higher temperature, and at the boiling point is dissolved by water in all proportions. It is also soluble in alcohol; but ether, or the essential oils, at least that of turpentine, do not take up the smallest proportion of it. Concentrated sulphuric acid turns it of a beautiful red colour, perfectly resembling that of the bi-chromate of potassa. Muriatic and nitric acids dissolve without colouring it. Its solution is not precipitated either by galls, gelatine, acetate or sub-acetate of lead, alum, or tartar emetic. Boiled in excess with lime-water, it does not neutralize the lime, and is incapable of dissolving the oxide of lead. It melts at some degrees above the temperature of boiling water, and assumes the form of a crystalline mass upon cooling. If heated somewhat beyond its point of fusion, it takes a yellow citron colour, and becomes brittle. It consists of carbon, hydrogen, and oxygen.

46. Bromides of Mercury.—Experiments have been made with the bromides of mercury, which appear to show that they are closely analogous in their operation on the system to the chlorides. The proto-bromide is found to resemble calomel, from which, however, it differs in more actively stimulating the urinary secretion, and in less readily producing salivation. The deuto-bromide is analogous to corrosive sublimate; but has a more decided effect upon the kidneys and skin, and salivates less quickly. It is therefore preferred in cutaneous eruptions. The author of the experiments, Dr Wernick, physician to an Austrian regiment, gives the deuto-bromide in very minute doses. He considers the ethereal solution as the best form of administration. The proportion employed by him is one grain of the deuto-bromide to a drachm of ether, of which ten, fifteen or twenty drops may be taken every day after dinner, in a little barley water.—*Archives Générales*, August 1830.

47. Acidulous Phosphate of Quinia.—Reports on new remedies or new forms of old remedies are to be received with much allowance. Physicians have their favourites, and in presenting them to the public, usually take care to dress them off in the best style. The phosphate of quinia, with a slight excess of acid, appears to be a favourite with M. Harless. He has found it much more easily supported by irritable stomachs than the sulphate, to which it is also preferable in subjects of a nervous temperament, and in those who are liable to sanguineous congestions or inflammations. It never produces that kind of uneasiness which we sometimes observe to follow the administration of the sulphate; and it has, moreover, the advantage of exciting the heart less powerfully, and of occasioning no irritation of the respiratory organs. As it is but slightly soluble, M. Harless advises that it should be given in the form of powder or of pill, and in the dose of from one to four grains. *Archives Générales*, Aug. 1830, from *Heidelberg Klinische Annal. Vol. V, p. 565*.

48. Cinea.—We quote from the *Journal Universel*, June 1830, some facts relative to this medicine, which we have not yet communicated to our readers. According to Dr Francois, the powder of the root has a bitter taste, which is exceedingly disagreeable to the sick. Its dose may be carried as high as two drachms, but it produces variable effects. The aqueous extract, on the contrary, is easily administered, and uniform in its results. It may be prescribed in the quantity of from six to twenty-four grains. In whatever form the medicine is given, its action is essentially purgative and diuretic. It is slow in producing its effects, and must often be continued for a considerable length of time before advantage can be gained from it. Advantage will frequently result from using in the first place a quantity sufficiently large to produce a decided impression, which is to be prolonged by prescribing the medicine afterwards in small doses, three or four times in the twenty-four hours. It is stated as a fact, that the urine is almost always brought by its influence to the natural state, though previously red, thick, acrid, or offensive. It occasions in some persons uneasiness, nausea, and colic, which M. Francois attributes to an irritability peculiar to the individual,

as they have been found to occur after a small dose in patients who have afterwards experienced no inconvenience from a much larger dose; it sometimes also causes vomiting. M. Francois has been very successful with it in the treatment of dropsy, and considers it preferable to all the remedies hitherto employed in this complaint; not from a belief that it is more energetic than colchicum, squill, nitre, digitalis, &c. but because it is exempt from the serious inconveniences of these medicines, while it fulfils the same indication. Often tonic, always purgative and diuretic, it ranks in his estimation at the very head of the medicines calculated for the treatment of ascites or anasarca.

We understand that a portion of the extract has reached this city, so that our physicians have it in their power to put to the test of experiment the information they have received from abroad.

49. *Sulphate of Quinia administered in a new mode.*—Dr J. P. Pointe of Lyons cures intermittents by directing his patients to rub the sulphate of quinia in quantities varying from two to six grains daily or twice a day, upon their gums and the inside of their lips and cheeks. Whether the remedy is absorbed or swallowed, it might be difficult to determine: at any rate, there are few patients in this country who would not prefer a resort to absorption by a blistered surface, to the protracted bitterness of the quinia applied in this way. See a paper by Dr Pointe in the *Journal Universel* for June 1830.

50. *Different kinds of rhubarb distinguished by means of Ioduretted Hydriodic Acid.*—According to M. Gregèr, ioduretted hydriodic acid gives different colours with the different kinds of rhubarb. It tinges the Russian rhubarb green, the Chinese of a brownish colour, the English deep red, and the French blue.—*Journ. de Chimie Medicale*, September 1830.

51. *Analysis of the leaves of the Uva Ursi.*—M. Meissnu has ascertained that one thousand parts of these leaves contain ten of gallic acid, twenty-nine of tannin with a little gallic acid, three hundred and thirty-five of tannin, forty-four of resin, sixty-three of chlorophylle, thirty-three extractive with acidulous malate of lime and traces of muriate of soda, eight of extractive and citrate of lime, one hundred and fifty-seven of gum, one hundred and seventy-six of extractive, ninety-six of lignin, and sixty of water.—*Ibid.*

52. *Volatile Oil of Bitter Almonds.*—It appears from the experiments of Robiquet and Boutron-Charlard: 1. That the volatile oil of bitter almonds does not exist already formed in the fruit, and that water is necessary to its production. 2. That benzoic acid does not pre-exist in the oil, but results from the absorption of oxygen by the oil. Finally, that there exists in the bitter almond, a white, inodorous substance, unalterable in the air, of a bitter taste, soluble in alcohol, crystallizable in radiating needles; for which substance they propose the name of amygdaline.—*Ibid.*

VII. SURGERY.

53. *New Instrument for extirpating Diseased Tonsils.*—The profession is already acquainted with the ingeniously constructed instrument invented by Dr Physick for the excision of the uvula and tonsils. Founded on the apparatus of Brambilla and Heister, which were of small size, and applied solely to the extirpation of the uvula, the instrument of Dr Physick greatly excels them in the solid qualities of more extended and more complete applicability. The double plate, pointed knife, waxed linen bandage, and convenient handle, render it the property of the modifier, who is the originator also of its application to the tonsils. In addition to this instrument, Dr Physick devised forceps for the elongation of the tonsils, which are sometimes inaccessible to the knife unless so aided.

Perhaps the substitute for the forceps, delineated in the plate, will not be found unacceptable. This substitute, invented by J. K. Mitchell, M.D. from whom we derive the present notice, consists of a spear A B, formed so as to slide through a socket D, which socket is supported in such a manner as to turn upon a pivot at E. A spring at F tends to elevate the handle, and to keep depressed the point of the spear. A screw at G is used to fix the point, to which the handle of the spear may be depressed, and of course the degree of the possible elevation of the point A.

In fig. 1 is seen the instrument prepared for the commencement of the operation.*

Fig. 2 exhibits it in the second step, the spear having been pressed forward into the tonsil, and the shoulder C having come into contact with the socket D.

The last act of the operation is represented in fig. 3, when the tonsil drawn through the ring by the depression of B and elevation of A, is undergoing abscission by the knife H shown *in transitu*.

The point of the spear is incapable of descending below the plane of the lower plate, so that it cannot endanger the safety of the patient, for it only penetrates the summit of the gland.

The point of the spear may be of any required form, barbed or otherwise. The barb secures the gland better, and assists in extracting it after the abscission.

The socket D, and its support afford a good means of depressing the tongue, so that the surgeon may easily conduct the operation without an assistant.

Some surgeons think it advantageous to put the gland in a state of tension before abscission, deeming the patient thereby better secured from danger of wounding the larger blood-vessels at its base. The tension for such a purpose is done easily by moving the whole instrument in a direction from the tonsil, after the gland has been transfixed and drawn through the ring.

When the gland is so prominent as to pass through the ring without traction, the spear is useful to secure the withdrawal of the part to be cut off, an elevation of a line or two sufficing to keep the spear clear of the knife.

54. We are indebted to Dr W. S. W. Ruyschenberger, assistant surgeon United States Navy, for the detail of several cases of disease from the Journal of the U. S. Naval Hospital, Washington City, D. C. The following modest statement of his reasons for publishing these may have a suitable influence on others, to whom we would recommend it.

"Believing that the science of medicine may be viewed at present as a great legal question, with an infinity of clauses, charges and specifications at issue, before a court of inquiry between truth and error, plaintiff and defendant, in which all concerned are bound to give in their testimony without the form of subpoena; I have accordingly selected the following cases (with the permission of the surgeon) from the Journals of the United States Naval Hospital, not doubting but they may be useful on the summing up, to some one of the many points still sub-judice in the great cause."

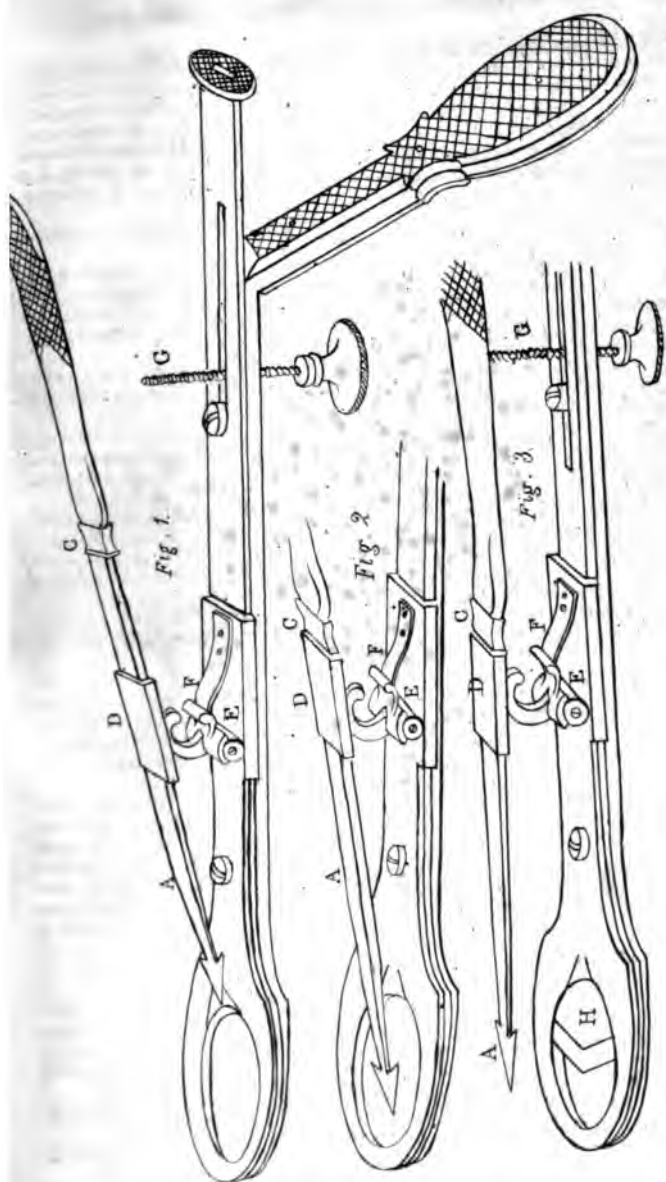
We regret that it is not in our power to give all the details and even all the cases. We shall select those of most interest.

"*Fistula in ano*. Peter Slayne, admitted March 8th, 1830, ætat. twenty-six. He states that seven months since, on board of the United States ship Guerriere, he was affected with a small abscess which terminated in a fistula in ano. His general health does not appear to have suffered. On examination, the probe cannot be made to enter the fistulous opening more than a half inch.

"24th. Probed a few days since to a greater depth, but without discovering a communication with the intestine.

"April 2d. Passed the probe an inch and a quarter; no communication with the rectum.

* In the drawing the waxed linen or adhesive plaster bandage has been omitted. It is, however, essential to the completeness of the operation.



" 17th. Has been using, for several days, an injection of solut. acet. zinci, and also the following electuary internally, as prescribed by the surgeon.

R. Pulv. rad. inul. camph.	1 oz.
Pip. nigr.	1 oz.
Sem. foenic.	3 oz.
Sacc. alb.	2 oz.
Mel. purif.	2 oz.

M. ft. Electuar. The size of a nutmeg to be taken twice a day.

R. Acid sulph.	6 gutt.
Aq. pluvial.	4 oz.

M. ft. inject. to be used daily.

" May 20th. As yet, little benefit has been derived. Injection changed to the following :

R. Nitrat. argent.	5 grs.
Aq. pluvial.	1 oz.—M.

" 23d. The probe passes one inch and a quarter without difficulty. The discharge is small. After injecting the nitras argent., a small piece of lint imbued with the ung. præcip. rubr. is to be introduced into the orifice, with a view of dilating it, that the remedies may be more certainly addressed to the bottom of the fistula.

" 25th. Probe passes into the gut; suspend the treatment.

" June 7th. On examining the part this morning, with the intention of performing the usual operation, the external orifice is closed, and the patient states he has suffered no inconvenience nor observed any discharge for three or four days. To resume the electuary.

" 14th. Discharged for duty, having been one hundred and eighteen days in the hospital. About the 1st of July he went to sea, apparently in sound health."

Remarks. Whether this case was cured by the treatment, or "got well," it would be wrong to decide till the plan is proved to be effectual in similar cases. While taking the electuary, he complained of "a burning heat about the anus, which ceased on leaving off the use of the medicine."

" *Stricture of Urethra, and Incontinence of Urine.* Henry Smith, a stout, healthy-looking mulatto man, aged about twenty-five, admitted March 11th, 1830. He states that seven months ago, while labouring under gonorrhœa, he attempted to overcome a severe chordee, by sexual intercourse; that considerable hemorrhage ensued, and a permanent stricture at the end of about three weeks gave rise to his present condition. Since the commencement of his disease, he has been under the necessity of wearing a vessel to receive the urine which constantly dribbles from him. He does not feel the necessity of emptying the bladder. Though many attempts have been made, a bougie, even of the smallest size, has never passed beyond the stricture.

" April 9th. Attention has hitherto been paid to the state of his bowels, which were constipated, and also to the secretion of urine. Passed a bougie, apparently for half an inch, through the stricture, which is situated at six inches from the glans. At night, some irritation, pain in the loins.

R. G. camph.	5 grs.
Spts. vini.	Q. s. ft. pulv.
P. G. opii.	1 gr.

M. ft. pill.

Decoct. sem. lini, as a drink.

" 24th. The bougie has been introduced frequently, and during the last week daily. It passes an inch further than at the commencement of the treatment.

" May 23d. The bougie has been used on alternate days, and for the last two weeks he has been able to pass his urine in a stream. The stricture is yielding to the treatment. The following unguent has been used, in the form of frictions, daily, to the urethra, near the seat of the stricture.

R. Hydriod. potassæ	1 scr.
Cerat. simpl.	1 oz.—M.

The dribbling still continues.

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"June 8th. A full sized bougie is now passed, and a catheter is worn for two or three hours every day. The dribbling is much diminished: he passes his urine in a full stream, and feels occasionally, the 'besoin de pisser.'

"25th. He uses the bougie himself daily, and is improving.

"August 2d. Discharged cured, having been one hundred and forty-four days in the hospital.

"*Remarks.* The instrument used is what is termed the 'cat-gut bougie.' I am convinced from the above case, and another of much longer standing under treatment at the present time, that much may be done by a persevering use of the simple bougie, and perhaps a cure might be effected in every instance—even of the longest standing."

Aneurism of the Arteria Innominata, with diagrams. The details of this case are also given by Dr Ruyschenberger. We have only space to mention, that the patient, Barney Hughes, aged thirty-one, was admitted into the hospital on the 6th of July 1830, with dyspnoea, accompanied by a slow and small pulse: that afterwards, the symptoms indicated the formation and evacuation of vomicae in the substance of the lungs; and the patient was treated for phthisis pulmonalis; that occasionally great dyspnoea supervened, with symptoms of interrupted circulation; these became more urgent on the 25th of September; deglutition, as well as respiration, were difficult; these symptoms continued, with occasional bloody expectoration, and evident loss of strength. He died on the 18th of October.

"*Post mortem examination*, ten hours after death. Body free from fat; rigid; muscles florid. The lungs did not collapse. The left one free from tubercles, or any marks of disease; floated in water. The right one also healthy, excepting the lower lobe, which was very much congested, and contained several open vomicae. There were no pleuritic adhesions, nor could an abscess, or the remains of one, be discovered in the chest; there was no fluid effused. An aneurismal tumour of the arteria innominata, with the great veins and nerves running anteriorly, was found extending from the origin of the vessel to within an inch of the thyroid gland, adhering firmly to the trachea, which was nearly surrounded and pressed by it to the left side; it pressed also on the oesophagus, no doubt giving rise to the great difficulty of deglutition complained of by the patient. On opening the tumour, and removing the fibrous coagulum, weighing two and a half ounces, which it contained, an irregular opening, of an inch in length, and half an inch in breadth, was found communicating with the trachea! It appeared to be the effects of ulceration; its edges were irregular, and portions of the cartilaginous rings extended across it. The lining of the trachea was of a dark brick red, as also was the lining of the aorta. There was nothing unusual about the heart: the arch of the aorta was rather larger in diameter than usual. The blood in the veins fluid, and of a very dark colour. This state of things I have endeavoured to represent by the accompanying diagrams.

EXPLANATION OF THE DIAGRAMS.

FIG. 1. *Front view.*—1. The trachea. 2. Right carotid. 3. Right subclavian. 4. The aneurismal tumour. 5. Right bronchium. 6. Pulmonary artery. 7. Right auricle. 8. The aorta. 9. Left subclavian. 10. Left carotid. 11. Innominata.

FIG. 2. *Back view.*—1. Trachea. 2. Aneurismal tumour. 3. Left bronchium. 4. Right bronchium. 5. Aorta.

FIG. 3.—1. The trachea. 2. Cavity of the tumour. 3. Opening into the trachea with the cartilaginous rings extending across it. 4. The tumour.

FIG. 4.—1. View of the opening from the inside of the trachea.

"On opening the abdomen, the stomach and intestines were found distended with air, and the latter slightly injected, containing portions of fecal matter. The stomach contained about a gill of fluid,—probably the drink he had taken. The liver was somewhat enlarged, and of a light colour—the gall bladder contained about half an ounce of healthy bile. Spleen bluish, contracted and firm. Bladder empty. Head not examined.

Fig. 1.

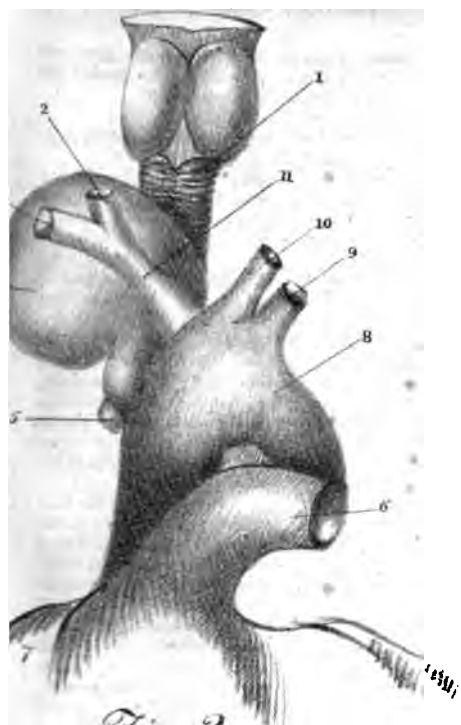


Fig. 2.

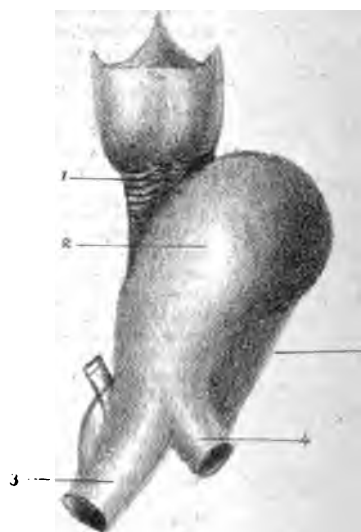


Fig. 3.

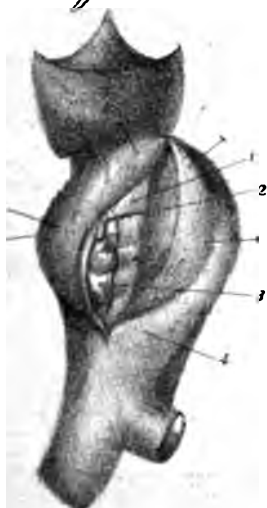
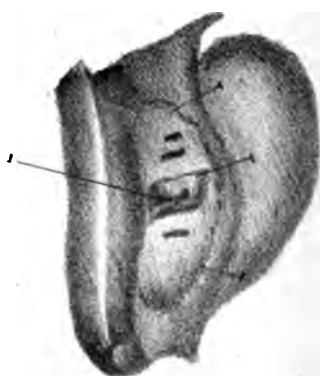
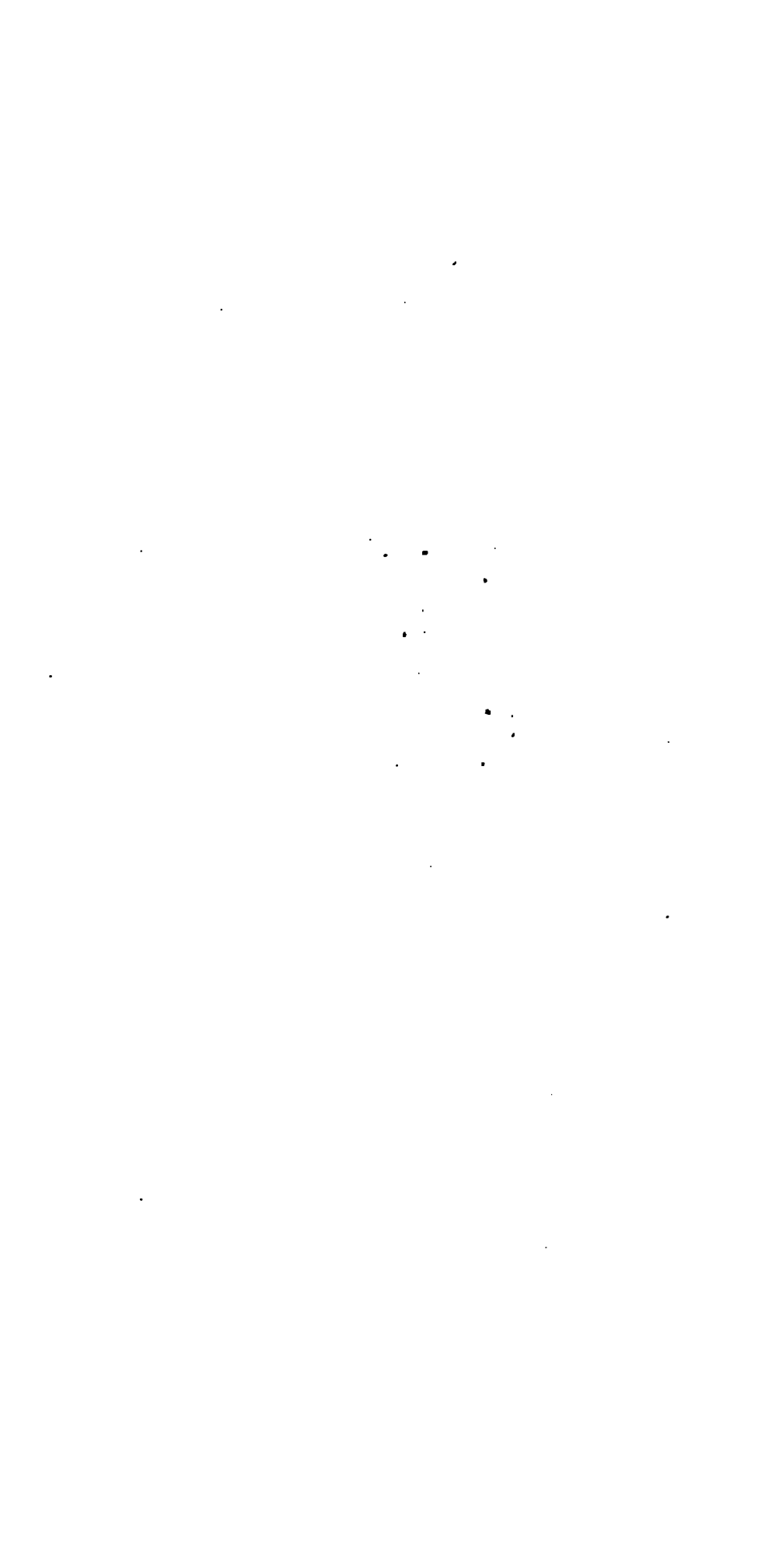


Fig. 4





“Remarks. He stated to his attendants, that he was confident of the existence of a tumour in his neck, but never complained of its pulsating, nor was he affected by exercise. He attributed his disease to sleeping on the ground while “working on the canal,” and said, that his physician told him he had the “asthma.” He had been bled, and had taken expectorants. He was discharged from the U. S. Ship Brandywine in October 1829, having been on board of that vessel more than three years, and had suffered, occasionally, from hepatic derangement, while in the Pacific. He was rather intemperate in the use of spirits. He was born in Ireland.”

55. Fracture of the Cranium, accompanied with loss of Brain and Hernia Cerebri; successfully treated.—By Joseph K. Swift, M.D. of Easton, Penns. “On the 16th of December 1825, I was called to Jacob Sherrer, of this neighbourhood, who was thrown from his horse while in a state of partial intoxication, although his general habits were those of sobriety and industry. He had fallen against the sharp angle of a large stone, and received a fracture of the parietal bone, commencing about its middle, and extending downwards to the squamous suture, upwards to the sagittal suture, and backwards to the os occipitis, or very near to it. The wound of the scalp was between six and seven inches in length. About two square inches of the parietal bone were comminuted and driven through the dura mater into the substance of the brain: some of the fragments of bone were visible; but most of them were hidden in the brain, being forced edgewise into it; one piece in particular, nearly an inch in diameter, was covered to half an inch in depth, and so completely concealed, that I did not discover it until all the other fragments had been removed. I placed the pieces together, and finding that they would not fit, concluded that there must be a portion remaining, and found it with a probe. All the pieces so removed were entirely separated from the integuments.

“Three other fragments, equal to two square inches, near the occipital bone, were turned at a right angle, directly into the substance of the brain, but these were not entirely separated from the scalp, although the dura mater and other membranes were lacerated. I elevated these portions of bone to their natural level.

“A surface of brain was thus exposed, from three to four inches square, in several places penetrated by fragments of bone to the depth of more than an inch, denuded completely, and lacerated by fragments of various sizes.

“After carefully removing these fragments, I separated nearly a tablespoonful of brain, which was lying loose upon the wounded surface; besides which, a small quantity of brain was observed upon the stone where the accident occurred, but how much I did not ascertain.

“A spicula of bone had penetrated the longitudinal sinus, from which a considerable quantity of blood had escaped previous to my arrival; it was then readily commanded by a dossil of lint. The left side was paralyzed, the injury being on the right.

“I drew the integuments together, and confined them by a couple of stitches, one at the upper and another at the lower angle of the wound, leaving a disunited space in the middle of about two inches. A light flaxseed poultice was directed to be placed over the wound; the patient’s head to be kept greatly elevated, and cold applications to be applied, excepting to the part occupied by the poultice. I bled him three pints, gave a dose of cream of tartar and jalap. Diet: bread and water. Room to be kept dark, and absolute quiet enjoined.

“During the bleeding he vomited freely, and fainted twice. Notwithstanding the extent of injury which the brain had sustained, he retained almost entire possession of his senses; his feelings were excited, and his memory somewhat affected, with an increased disposition to talk, but volition was not impaired. During the time I was operating on and dressing his head, he answered all questions in a rational manner; knew by the sensation when I removed a piece of bone, and conversed much with his wife and children.

“On the following morning the dressings were removed; numerous portions

of brain adhered to them, perhaps a teaspoonful. A serous fluid was discharging. Bled him three pints.

"In the evening, discharge of serum, mixed with blood. Bled him one quart.

"About the third day from the receipt of the injury, a portion of brain, equal in size to a common walnut, protruded from the integuments, by which it was considerably constricted at its base. Good pus was discharged in small quantity, and the tumour sloughed off in the course of three or four days, and was succeeded by two or three others of smaller size, which underwent the same process. For several subsequent weeks there was a copious secretion of healthy pus; and to be brief, the patient recovered without a single unpleasant symptom, to the utter astonishment of myself and of all who saw him.

"The indications I pursued throughout this case were, the most rigid adherence to the antiphlogistic regimen; an upright position of the head; the constant use of cold applications; absolute rest and quiet, and a careful preclusion of every exciting cause. Venesection was pushed to such an extent as to keep the pulse constantly below the fever point; whenever it evinced an increase of action I bled him, mostly *ad deliquium*: the bowels were slightly constipated, rendering purgatives occasionally necessary.

"The paralysis had much abated before the cicatrization of the wound, and the slight disturbance of his mental faculties also subsided.

"Nine months have now elapsed since the occurrence of the accident, and the patient, a farmer, is able to attend to his business. His left side is still weaker than his right, although its use is completely restored. In August last, I called him into my office to show his head to my friend Mr Franklin Peale, and in answer to the many inquiries we made him, he stated that he thought his faculties better than they were before his injury; that he could calculate with more facility, and that previously to the accident, he was subject to a very severe periodical headache, to which he is now a stranger.

"The motion of the brain is distinctly visible through the integuments, and the vacuity from loss of brain and bone would contain rather more than half a gill of fluid.

"May not the extent of laceration of the dura mater have been favourable to the fortunate issue of the case, by allowing a free discharge of pus and extravasated fluids, and consequently removing all pressure from the brain? At all events the case decidedly proves, that injuries of the brain, with loss of its substance, and consequent laceration of the membranes, are not necessarily mortal.

"March 21, 1826. The patient continues well, and experiences little or no difficulty in attending to his ordinary duties. The left arm is still not so strong as the right, and its motion not quite so free, but it is progressively recovering.

"My friend Dr Cooper, of Easton, attended the patient with me after the second or third day of the accident."

Note. By Samuel George Morton, M.D., one of the physicians to the Philadelphia Almshouse Infirmary.

"Happening to be at Easton during the present month, (July 1830,) Dr Swift politely took me to see the individual whose case is recorded in the preceding communication. Four years and a half have now elapsed since the accident occurred, and the subject of it remains precisely in the situation described by Dr Swift: he assured me of his increased facility in making calculations, and of the entire absence of headach, which had greatly afflicted him prior to the receipt of the injury. He is of a robust frame, and can at present endure as much hardship as at any former period of his life. No paralytic symptoms remain.

"The cavity in his head remains as great as ever, but the integuments have become much thickened, and the pulsation of the brain, though obscure, is still evident to the touch."

56. *Rupture of the Intestine Jejunum.*—The following case has been politely furnished by Dr J. M. Kollock in a letter to Dr Wood, dated Savannah, Sept. 30th, 1830. "April 10th, 1830, I was called to visit a negro man at a plantation about three miles from the city, height six feet, age forty. Was informed that

on the preceding evening, he was thrown from a cart on a stump, which struck him on some part of the abdomen. Very great pain was the consequence, which continued to an excruciating degree all night. I found him lying on his back groaning, his feet drawn up, belly very much swollen and externally tender to the touch. When inquiry was made as to the seat of pain, he placed his hand just above the pubes. A tumour was observed, on examination, a little below the right abdominal ring, whose elastic feel, tenderness, together with the symptoms of vomiting, cold extremities, hiccup, tumid and painful abdomen, furnished just reason to suspect strangulated hernia. Under this impression, I directed him to be placed in the warm bath, until my return to and from the city, with instruments and assistance, in case of the necessity of an operation. I carried out a medical friend with me, prepared as we supposed to meet the indications of the case. The employment of the taxis, after being subjected to the bath about half an hour, was successful, apparently, in reducing the intestine; some tumour, however, still continued. In a few minutes he had several free passages, the effects (as we supposed) of a dose of salts which had been given previous to our seeing him; after some of these operations he nearly fainted, but on moving felt easier and was disposed to sleep. The relief from pain, together with the freedom of his evacuations, induced the belief that whatever strangulation had occurred, was now relieved, although there still continued considerable tumour in the upper part of the scrotum, which always disappeared on pressure, and returned when it was discontinued. Its disappearance was not attended with the sensation usually produced by intestine retreating into the abdominal cavity, but was like that of a fluid squeezed from a sack. Although we could not satisfactorily account for this circumstance, we determined to pursue the treatment for peritoneal inflammation, as indicated by other symptoms. He was accordingly bled, and a large blister ordered for the abdomen. We were preparing to return to the city, with the intention of visiting him in the evening, when the nurse came to me with the information that he had again fainted. I returned to him, and found that he had fainted in an attempt to rise to stool. He was lifted into bed, and the usual means resorted to for his restoration. He continued to gasp for a minute or two, and breathed his last.

"Our impressions from the circumstances were, that a fatal deliquium had been induced by the profuseness of his evacuations, and his exertion in rising to stool.

"*Autopsia*, three or four hours post mortem. Before proceeding to an examination of the abdominal cavity, I cut down upon the hernial tumour in the usual manner for the relief of strangulation. After dissecting through a number of layers of fascia, I came to what appeared to be a sack: on making a very small cut into it, a fluid of a bilious appearance and smell spouted out in a continuous stream without having the effect of reducing the tumour. Being uncertain as to the nature of what I had cut into, I left it and proceeded to an examination of the abdominal contents. The first stroke of the knife into the peritoneal cavity gave vent to a torrent of the same fluid which had gushed from the scrotal tumour, mixed with portions of coagulated lymph. Further dissection exhibited a most intense degree of inflammation of the whole cavity; the intestines agglutinated to each other; coagulating lymph of a purulent appearance thrown out in every direction. Turning over the intestines, a hole large enough to admit the end of the index finger was discovered in the jejunum, two or three feet from the stomach, and near the junction of the intestine with the mesentery. A worm of the lumbricus species had made its way through the hole and was discovered in the cavity of the peritoneum. The stomach contained a quantity of yellow bilious fluid, and stercoraceous matter. The gall-bladder was full. The liver exhibited a pale appearance. The abdominal ring was free from intestine, consequently the tumour in the scrotum was a sack, filled with the fluid which the abdomen contained. The violent peritoneal inflammation was no doubt, in a great measure, occasioned by the effusion of the intestinal contents.

"Our conclusion from these appearances was, that a rupture of the intestine was occasioned by the blow from the stump on which he had fallen on the evening previous to my seeing him, and that the intense abdominal inflammation was the immediate cause of his death. An examination of the section of

intestine, in which the rupture occurred, induced me to believe that there existed disease of the part previously, for the opening had the appearance somewhat of ulceration, and the whole circumference of the gut at that place exhibited an unnatural aspect. Had this been the immediate effect of a blow on a sound intestine, I should have expected a rather different state of the part; and it is probable there would have remained some external marks of violence on the abdominal muscles, *of which no traces could be found.*

"Dr Waring (whom you know by reputation at least) was of opinion, on examining the section of intestine on which the violence was committed, that the hole which was discovered was the "result of sphacelation, caused by the blow which was received at the time of the fall, and that the rupture occurred some time between the receipt of the injury and the death of the patient; that ulceration would have exhibited thickening of the parts, and appearances of chronic disease; but here was a bruise, attended with extravasation of blood between the coats of the intestine. He was also of opinion that much of the inflammation of the peritoneal surface of the viscera was occasioned by the violence of the blow."

57. *Aneurism of the Aorta, rupture of.*—We are also indebted to Dr Kollock for the following case:

"The subject of this case was a negro woman, at a plantation nine miles from the city, aged about seventy. She had, for a length of time, been subject to difficulty of breathing, almost total loss of voice, pain in the chest, cough, and sometimes bloody expectoration. Some weeks previous to her death, which occurred August 8th, 1830, I was called to her, and was informed that she had suddenly fallen down, to all appearance dead. She had recovered her senses, however, when I saw her, and was breathing with very great difficulty, and expectorating blood. I bled her freely, which was attended with relief. Having many of the symptoms of hydrothorax, together with dropsical effusions in other parts, I put her upon the treatment accordingly, viz. calomel and squill, perpetual blister to chest, &c. by which she was much relieved, and continued better until the above date, when she fell while walking, and immediately there was a gush of blood from the mouth which terminated her existence.

"*Autopsia*, twenty-four hours post mortem. Body supine. The sternum being raised, the pericardium was found distended; left lung collapsed, adhesions between it and the ribs; pericardium contained fluid; heart a little enlarged. On tracing the aorta from the heart, just beyond its arch and the origin of the arteries of the superior parts, a large tumour was felt, like a second heart. This adhered to the left lung and trachea. Dissecting them out, and separating the adhesion, a rupture of the artery was discovered, through which the blood had been effused into the cells of the lung, to which the aneurisinal tumour had adhered. The sac was filled with coagulated lymph. The coats of the artery were much diseased, and thin at the place of rupture. The internal face of the sac had the appearance of cells, or holes, in the inner coat. These places appeared to have been sometimes the seat of rupture; and it is probable that a partial rupture of this kind took place at the period of the first hæmoptoe. The coagulated lymph filled two-thirds of the cavity of the sac, and was firm and spongy, and not adherent to the sides of the artery. Coagulated blood was found behind the œsophagus, as high as the larynx. The arteria innominata was much enlarged, and its coats thickened."

58. *Mrs Denmark's Case.*—Our readers will remember, that this case was the first in which an attempt was made by Mr Wardrop to cure an aneurism of the arteria innominata, by tying the carotid or subclavian artery, or both these branches. By reference to Vol. V, p. 227, [where, for Mrs A. read Mrs D.] and page 466; Vol. VI, p. 191; and Vol. VIII, p. 427, of this Journal, information respecting the history of this case, and the opinions and hypothesis of different surgeons as to its nature and the propriety of the operation, will be found.

In the *Lancet* of September 9, 1828, (the operation was performed on the 6th

of July 1827.) Mr Wardrop reports, that on the 8th of August 1828, the patient was more emaciated, in consequence of an attack of bronchitis; but her appetite has returned; the difficulty of respiration has greatly diminished, so that she can sleep in a natural position, and is entirely free from the dreadful sense of threatening suffocation. "No tumour susceptible in the situation of the aneurism, but an unnatural feeling of hardness can be perceived at the root of the neck, immediately above the sternum, arising, no doubt, from a condensation of the aneurismal tumour. The right carotid still pulsates, although not so strongly as the left; its pulsation corresponds with the heart, but its temporal branch affords no indication of the circulation of blood; the right radial artery beats with about half the strength of the left." The patient was free from her former pains in the neck, shoulders and back, and could take daily exercise in the open air.

Under these circumstances the aneurismal disease was considered as cured. In about three months, however, a tumour appeared at the upper edge of the sternum, and, as it advanced, covered the inferior portion of the trachea. Some months afterwards, a second tumour appeared near the root of the right carotid, and extended up on the right side of the neck. The two tumours were so intermingled at their base, with the firm, consolidated remains of the old aneurism, that their limits could not be ascertained.

Mr Wardrop maintaining his former opinion, that the arteria innominata was the seat of the disease, proposed tying the right carotid artery: the former operation of tying the subclavian having been undertaken on the supposition that the right carotid was obliterated; it having ceased to pulsate. A consultation, however, discouraged the operation.

The aneurism increased, anasarca and dyspnoea followed, and eventually, a diarrhoea, by which the patient was exhausted, and died on Friday the 13th of (September?) 1829.

Dissection. The tumour was not diminished in size; it occupied the space between the two sterno-mastoid muscles, and above was divided into three lobes, formed of the original portion of the aneurism, and the two recent tumours. It was larger than a turkey's egg, and had produced some absorption of the sternum. The tumour felt firm, and in laying it open, appeared nearly solid, the clavicular and tracheal portions being filled with firm coagula, and the cavity of the aneurism being limited to the division between the sternal and tracheal portions. It was about the size of a walnut. The parietes of the heart were thinner and softer than natural, but no other change observable in this organ. The only change in the aorta was, that the coats were preternaturally yellow, rather thicker, and had a few points of ossification. The size of the vessel was natural. On cutting open the innominata from the aorta, the aneurism was found to have extended from its origin to its bifurcation. The subclavian artery was obliterated, where the ligature had been applied. The right carotid was pervious, and quite healthy. The lungs were healthy, excepting a preternatural redness of the mucous membrane of the bronchiæ.

Mr Wardrop observes, that the dissection shows, first, the correctness of the diagnosis; second, that the principles laid down by him admit of successful practical application; and third, that the current of blood through the carotid, will be sufficiently strong to extend the walls of the tumour in the direction of that current, to whatsoever degree the progress of the aneurismal swelling may have been arrested by the closure of the subclavian.

Our readers are thus at last furnished with the issue of this most interesting case, and we cannot but reiterate our approbation of the general principles laid down by Mr Wardrop, and our belief that in suitable cases they will be practically useful. The case of Mr Evans (Vol. VIII. p. 215 of this Journal) and this case of Mrs Denmark would prove that a ligature beyond the tumour will answer even in those cases where large vessels are given off at the tumour or between it and the ligatures. This has been admitted. As above observed by Mr Wardrop, it is evidently required for an aneurism of the innominata, that both the large vessels, the carotid and subclavian, must be obliterated for a permanent cure: but it is equally evident, as far as the above operations go, that a cure may be accomplished, although such vessels as the internal mammary, vertebral, thyroi-

deal, &c. &c. remain pervious. If subsequent experience should confirm these facts, the operation of Brador will be more extensively useful than has hitherto been imagined.

59. Radical cure of Hernia.—M. Belmas has submitted to the French Institute, a memoir detailing the circumstances which led him to the discovery of a radical cure of hernia, and the experiments which demonstrate its truth. This will hereafter be published. The *Journal Des Progrès*, vol. 3, 1830, presents the following summary of his investigations.

"An intestinal hernia, when once reduced, leaves a passage, continually open for a new displacement; the viscera readily glide along a canal always lubricated and formed of the hernial sac. All attempts, hitherto made, to obliterate the neck of this sac have failed, and been always dangerous. To effect a radical cure, an adhesion, as in the case of hydrocele, must be effected between the opposing surfaces of the cavity and a consequent obliteration of the sac. But this result cannot here be obtained with near the same facility as in the tunica vaginalis; for irritating injections, emetics, &c. do not confine their influence to the sac itself but extend to the abdomen, causing dangerous peritonitis. M. Belmas asserts, that, if a bag of gold beater's skin filled with air, be introduced into the abdominal cavity of a dog, it excites, around it, but merely to an extent corresponding with its size, an inflammatory irritation, followed by a lymphatic deposition, an absorption of air and also of the bag itself; so that at the expiration of some days, a concrete albuminous mass can alone be found, and after some weeks, only a fibrous knot remains. Similar experiments, made by M. Belmas on the hernial sac of dogs, have been followed with the same result as in the abdominal cavity. Filled with the distended bag, the sac inflames through all its extent, and is obliterated in a few days, in the manner above mentioned, without preserving any remains of the foreign body introduced. Of thirty female dogs affected with hernia, which have thus been operated on, in spite of the indolence of these animals, thirteen have been radically cured. M. Belmas operates in the following manner. A small bag of gold beater's skin, perfectly empty, is connected with a tube furnished with a stop cock. A small incision is made with a short and narrow bistoury at the most inferior part of the hernial sac, the edges of which are drawn asunder, and there is introduced into the sac a cannula and stilette, to the extremity of which the tube of the bag is fitted. The point of the cannula is pushed, with suitable precautions, to the superior part of the sac, near the neck. The stilette is then protruded, and through the opening which it makes in the skin, the cannula and the tube of the bag are to be drawn out. To this tube is to be attached that of another bag filled with air; the stop cock of the first is to be opened, and a sufficient quantity of air is injected into the bag of gold beater's skin and there retained by closing the cock.

The operation has already been practised on one patient, and with complete success, notwithstanding unfavourable circumstances, such as the advanced age of the patient, his cachectic constitution, a paralysis of the bladder and a chronic catarrh. Much swelling succeeded on the second day, and M. Belmas dreaded some unpleasant consequences, but none occurred. For two months and a half there has been no return of the hernia, although the patient is the subject of an habitual cough. This man has been presented at the clinique of the Hotel Dieu. It should be remarked that the bag should be introduced in a dry state into the sac. M. Belmas who at first thought it most convenient to cover it with oil, discovered that this alone was sufficient to prevent its absorption."

The ideas above suggested are new and may be useful, being founded on the fact that animal substances will be dissolved and absorbed by living tissues, as has been long known respecting animal ligatures. The objections to the above plan which strike us, are that continuous inflammation of serous membranes occurs much more rapidly in the human subject than in the lower animals, especially when the system is exhausted and irritable; hence the danger of peritonitis is not fully prevented: and secondly, we doubt whether simple adhesions, without contraction of the tendinous aperture, will be adequate for the permanent and radical cure of hernia.

60. *Excision of a Carious Rib.*—Louis Everard, says the *Jour. des Progrès*, vol. 3, 1830, was admitted on the 23d of March, into La Charité, with a fistulous ulcer of long standing over the sixth rib on the right side, which evidently communicated with an abscess in the course of the rib. The patient was much emaciated, had a severe cough and a thick mucous expectoration in no degree purulent, thus differing materially from the discharge from the fistula, and manifesting that no communication existed between the surface of the bronchus and the abscess about the rib. M. Roux excised four inches of the fifth rib, (being the whole of the apparent diseased portion,) on the 24th of April, without opening the cavity of the pleura. The abscess had evidently no communication with the internal tissues. At the first dressing, every thing appeared well, but on the third day, pleuritic symptoms ensued and the patient soon perished. On a post mortem examination the lungs were found partially adherent on the right side, and there was a considerable effusion on the same side into the cavity of the pleura of a sero-purulent fluid with flakes of lymph. Tubercles of the lungs existed, and also a caries of the internal surfaces of the second, third and fourth ribs.

61. *Laryngotomy in Trismus Nascentium.*—In the American Journal, No. 13, Dr. John Billinger, of Charleston, S. C. relates a case of Trismus, occurring two weeks after birth. Remedial measures were ineffectual and death seemed fast approaching—"the child could neither suck nor swallow; the muscles of the throat were rigid, and the larynx fixed; spasms of the muscles of the neck, chest, abdomen and back recurred (by experiment with a pulse-glass) every half minute. During these paroxysms, the veins of the neck and scalp became turgid, and the eyes seemed ready to start from their sockets. Respiration was performed with much difficulty; and in inspiring, the air produced a whistling sound. The pulse was small and fluttering. Dr. B. proposed opening the windpipe, and laryngotomy was performed between 10 and 11 o'clock, P. M. June 23, 1830, in the presence of Dr H. C. Glover. On puncturing the crico-thyroid membrane, air instantly rushed up through the opening, bubbling up the blood, which was also, in a few seconds, frothed out of the mouth. The hemorrhage was arterial and considerable for an infant of this age. A remarkable change occurred in the most prominent symptoms—the strong and frequent spasms were no longer observed; the convulsions which existed during the operation ceased, and the child lay motionless and seemingly inanimate: the pulse however was regular, and slower and stronger than before the operation. The child had a quiet night—spasms returning but two or three times. The quill introduced into the opening of the larynx had fallen out; respiration however was free and tranquil. The child took some gruel. Next day there were symptoms of laryngitis, which were subdued by means of calomel, oil, and antimony, assisted by blisters. The child eat heartily, and in a few days was decidedly convalescent.

The infant afterwards suffered from prolapsus ani, inguinal hernia, and subsequently from disordered bowels. Dr B. was requested to visit it on the 23d of June, one month after the operation. The child died the following night, exhausted by the intestinal irritation.

Dr B. has since resorted to this operation in the last stage of trismus nascentium; but too late, as no advantage resulted, and the patient died in some hours. He would recommend it not only in these cases, but also in hydrophobia, as he believes that death results from an interruption of the respiration by spasms of the glottis.

62. *Strangulated Hernia.*—In the *Transactions Medicales*, &c. by M. Gen-drin, for July 1830, an account is summarily given of five operations by M. Sanson, for strangulated hernia, attended by peculiar and important circumstances. In two cases, the hernia had been reduced by the patients, but the symptoms of strangulation continued, and a tumour could be felt, through the walls of the abdomen, situated above the ring. M. Sanson operated by exposing the abdominal ring, seizing the tumour in the abdomen, again drawing it out, and then dividing the stricture formed by the neck of the sac. The success was complete.

In a *third case* a man was brought to the Hotel Dieu, in a dying condition; a strangulated hernia was reduced, and the symptoms continued, but no signs of the tumour could be discovered by careful examination of the abdomen. On this account, and also because the patient was so nearly exhausted, no surgical measures were attempted. Death occurred soon afterwards. On examination post mortem, a strangulated hernia in its sac was found situated behind the pubis and above the bladder, which will account for its not being felt.

A *fourth case* is interesting, as exhibiting, says M. Sanson, the caution demanded when the seat of the strangulated gut cannot be ascertained. An individual was suffering from all the symptoms of an internal strangulated hernia; and had long been subject to an inguinal hernia, which was now reduced, but which had always been reducible and never strangulated. Palliative measures were altogether ineffectual. "A consultation of surgeons was held, a majority of which decided that nothing should be attempted. The state of the patient did not improve, stercoraceous vomiting continued, the strength declined, and no relief was experienced. A celebrated surgeon, seeing the state of the patient and the unequivocal signs of strangulation, proposed an operation, and thought it should be performed in the absence of all sensible signs of the existence of a strangulated tumour, either in the inguinal canal or in the abdomen near the ring. The operation was resolved on. M. Sanson retired to make the necessary preparations. At his return, every thing being prepared, and at the moment of operating, perceiving neither tumour nor pain, nor tension of any kind above the ring, and remarking that the portion of the belly which corresponded to the hernia was the only part which was not painful nor tense, M. Sanson refused. Then, examining the abdomen with all the care which he had already exercised in his former reiterated researches, he perceived on the left side, and very deep, an evident, although an obscure tumour of a cylindrical form, which he immediately regarded as the colon filled with fæces." An examination per rectum was resisted by a contraction near the sphincter, and difficulty was also experienced in attempting to introduce a gum elastic tube. Injections of oil were frequently administered with force, and some yellowish and soft fæces were brought away. M. Sanson then determined on the employment of a cathartic, but as the vomiting continued, vesication was excited on the thigh, and a drop of croton oil applied to the denuded cutis. An abundant evacuation followed; the vomiting ceased; the patient discharged, in three or four days, many pounds of soft and yellowish fæces, and recovered without difficulty.

In the *fifth case*, a strangulated inguinal hernia existed in the usual place—the operation was performed, but M. Sanson was surprised at the difficulty which was now encountered in returning the intestine, although the stricture at the ring and neck of the sac was sufficiently divided. He soon found that the intestine, when pushed up, accumulated above the abdominal canal; he carried his finger through the canal and observed it did not enter the cavity of the abdomen. He divided the abdominal ring, and then discovered, that above the canal the sac was dilated and formed a communication with the abdomen through a narrow aperture. The intestines were forced into this sac; the second and upper opening was enlarged, and the reduction effected.

63. *Extirpation of the Uterus*.—In the seventeenth and eighteenth numbers of this Journal, for January and April last, we republished some of the accounts of extirpation of the uterus *in situ*. In the last mentioned number we suggested some doubts of the propriety and even of the morality of such attempts, and have now further accounts to present, which are discouraging, and would limit exceedingly the utility of the operation.

The *Archives Generales* for July records the subsequent experience of the French surgeons. The first patient of Recamier's, (Vide Vol. IX, p. 225) who was subjected to the operation the 26th of July 1829, left the Hotel Dieu in about two months. Since then she had been several times carefully examined; there was frequent desire to urinate, rarely did she pass an hour without emptying the bladder; often during the night the urine flowed unrestrained, and not unfrequently there was an incontinence during the day. This, combined with

constipation, excited pain in the hypogastric region, and œdema of the external genital organs. In this state she entered the hospital December 1829. The vagina, cicatrix, &c. were found unaltered. After a few days she was again discharged. In the following April she was admitted with dysenteric symptoms, which were checked by opium. No alteration in the vagina, &c. was perceived, after a careful examination by Recamier and many other surgeons; and her general health was not seriously impaired. It appears, however, that the diarrhœa continued, and was aggravated by improper management, so that the patient, who did not return to the Hotel Dieu, died on the 12th of June 1830.

Another case is minutely detailed, in which the patient, aged thirty-six years, and who had been under the care of M. Casimir Broussais and others, was operated on by M. Recamier, on the 13th of January last, in the presence of MM. Marjolin, Lisfranc, Blondin, &c. She appeared to do well until the afternoon of the next day, when an arterial hemorrhage appeared from the vagina, and the patient died thirty-three hours after the operation.

Post mortem. It was discovered, by an aqueous injection into the aorta, that the hemorrhage had proceeded from the left uterine artery. The ovaries and tubes had been removed with the uterus. The rectum was uninjured; the vagina was sound—all the diseased structure had been extirpated; there was on the base of the bladder a very small orifice, through which urine had escaped. The peritoneum of this region was raised by æriform fluids; there were no signs of peritonitis, and other organs were healthy.

In the month of April following, another promising case occurred: the operation was decided upon and the time fixed, but the fears of the patient brought on a hemorrhage. The operation was deferred from this and other causes, for six weeks. It was then attempted, but owing to the want of firmness of the neck of the uterus, the instruments were torn out in every attempt to draw down the uterus; the hemorrhage was great, the pain excessive, (*atroces*) and hence the patient was abandoned to her fate. She afterwards left the Hotel Dieu.

Another patient, with cancer uteri, was placed under the care of M. Recamier; but this gentleman, with true professional liberality, submitted the case to a well instructed young surgeon, M. Dubled, who, at the sitting of the Royal Academy of Medicine, on the 11th of May, had read a memoir on an important modification of the mode of operating hitherto practised, and who had happily exemplified, on the dead subject, his peculiar views. With these M. Recamier was pleased.

The operation was performed by M. Dubled therefore, in the presence of MM. Recamier, Lisfranc, and many others, and, according to the report, in a very satisfactory manner. The details are given, for which we have not room. Suffice it to observe, that nervous and febrile symptoms supervened towards evening; she was bled, and also leeches on the hypogastric region; some hemorrhage came on from the vagina; the nervous symptoms continued; her strength failed, and she died in twenty-two hours after the operation.

Dissection manifested that the operation had been performed with great accuracy; the ligatures were properly fixed, and there was no peritonitis.

VIII. MIDWIFERY.

64. *Abortion.*—The following communication from a respected and intelligent medical friend, Dr R. Lee Fearn, of Alabama, will be found interesting, and may prove of importance to the practitioner.

"I have a negro servant, who, in 1820 or 1821, was married, being then just thirteen years old. She soon became pregnant—and lost her child about the fifth or sixth month: she had lost five children at about the fifth month, at the time of her entering her sixteenth year, when she carried one to the seventh month or nearly. On consultation with several very respectable physicians, it was thought that a separation from her husband would be highly useful; they were accordingly separated at a considerable distance, for nearly two years, and

we have reason to believe, with the utmost fidelity to each other. About five months after she came to her husband in this county, my brother and Dr A. Erskine being in attendance, could not prevent an abortion; she continued to lose two a year, with no pain of any consequence, or other inconvenience, more than is usual for a few hours. At this juncture, I (being in the Philadelphia Alms-house) consulted Dr Chapman, Dr Dewees, Dr Jackson, and others, and wrote to my brother, all to no avail. I found her, on my return home, again pregnant, with an extremely robust constitution, &c. and attended to her every day. She was delivered on the 25th of December last, at the full period of gestation, of a large boy, who is now alive, after having aborted ten or eleven times in nine years. My treatment, in addition to what is usual and what had been used frequently with her, that is venesection, laxatives, absolute rest, &c. consisted in the internal use of the tincture of cantharides, in such quantities as to keep up continual strangury, and also in having the lumbar region over the spine rubbed with the terebinthinate decoction of cantharides, (an excellent article so frequently used in the Alms-house) so as to keep the part continually excoriated. When the strangury became excessive, I used the usual means to mitigate it, and then continued the medicine."

65. *Prolapsus Uteri*.—In the New York Medical Journal, Vol. I. No 1, Dr Barker has made some judicious observations on the treatment of this troublesome complaint, and has proposed a modification of the gum elastic pessary, which, he says from experience, is very convenient and effectual. The indication is to keep the uterus in its proper position, without inconvenience to the patient. The more completely therefore the vagina can be filled without uneasiness, the more effectual will be the reduction; and experience would seem to prove that the globular or ovoid form is superior to any other. But practitioners are aware, that pessaries of this form are with difficulty introduced and removed, and hence one of sufficient size to pass the os externum will not always fulfil the requisite indications. Flat circular, and oval pessaries are hence substituted, and often effectually, but still in some instances completely fail. Mr Barker therefore proposes a hollow gum elastic pessary of a pyriform shape, and as large as may be required, into the neck of which is to be inserted a small ivory tube containing a valve and spring, and surmounted by a silver cap with an orifice at its extremity. This is to be introduced in a flaccid condition into the vagina, which can be easily accomplished: then by means of brass tubes, straight and curved, furnished with stop-cocks, and of a common gum elastic injecting bag, atmospheric air can be forced into the pessary so as to distend it as much as may be necessary. The injecting bag and tubes being removed, the air will not escape, owing to the valve in the neck of the instrument. When desirous of removing the pessary, the valve is to be depressed so as to allow the air to escape, when the whole can be with facility extracted; should any difficulty occur, exhaustion of the pessary could be readily effected by means of the tubes and the elastic bag. The advantages of this pessary are, 1. Its ready introduction and removal. 2. Its capability of being distended to any required magnitude. 3. That the patient can herself introduce and withdraw it. And, 4. That its size can be very gradually diminished as the vagina contracts and gains tone, until it may altogether be omitted.

Dr Barker says it might be removed at every menstrual period, and even oftener, say once a week, that astringent injections may be employed and the vagina allowed to contract.

66. *Gastrotomy, successfully performed after a Rupture of the Uterus*.—From the *Jour. des Progrés*, vol. 3, for 1830, we learn that Dr Salemi of Palermo, Sicily, relates the case of a female, aged thirty-six, pregnant with her ninth child, who fell from her bed during the second month of gestation, and afterwards suffered great disorder in the uterine region. At the ninth month, there was no indication of labour, but pain in the epigastric region was experienced and became insupportable, attended by an inflammatory fever, severe headach and disposition to stupor. For some days, a small quantity of coagulated blood flowed per

vaginam: the lower extremities and the abdomen swelled; the hemorrhage from the vagina ceased and a purulent discharge succeeded and continued to the tenth month. The patient's life seemed in great danger, a tumour appeared in the umbilical region, which opened in a short time and discharged a very foetid matter. Dr Salemi now visited this patient, and found her almost dead. Having heard the history and examined the abdomen carefully, he concluded that there had been a rupture of the uterus at the second month, that the fœtus had then passed into the abdomen and was now contained in the tumour. He therefore enlarged the fistulous opening, and through it extracted a fœtus piecemeal; first the right arm and then the whole trunk: the right foot two hours previously had been spontaneously discharged per vaginam. The effluvia from the fœtus was intolerable. The wound was dressed secundum artem, and the female left completely at rest. From this time, the recovery was rapid; the edges of the rupture in the uterus, of which the anterior portions were very visible, united and the wound in the abdomen quickly healed, so that scarcely a month elapsed before the patient was perfectly well.

This operation, falsely termed "gastroto-my" according to the technical meaning of the word, consisted in merely opening an abscess, caused by, and containing a fœtus, and it is to be regretted that a suitable acquaintance with the doctrines of adhesion and ulceration is so rare an accomplishment, that comparatively few are prepared for understanding even the nature of this state of things, and of course, for adopting a judicious and successful treatment. Gastroto-my, or the opening the general peritoneal cavity of the abdomen, where there are no adhesions and of course no cyst, or the Cæsarian section, in which there is, in addition, a division also of the uterine tissue, is much more dangerous, and although not unfrequently requisite and successful, should not be lightly undertaken.

67. Rupture of the Perinæum.—We learn from the *Transactions Medicales* for August, that at the sitting of the Royal Academy of Medicine in June, a discussion ensued as to the passage of the child's head through a central rupture of the perinæum. M. Moreau presented certain facts and observations to show that this rupture was the result of the presentation of the fœtus in one of the three last positions of the vertex. M. Capuron however maintained, that this accident probably never depended on this presentation, because when the head has its ordinary volume, a natural accouchement is impossible; assistance will be necessary; and if these labours do occur naturally, the head is then small, and sufficient violence will not be offered to rupture the perinæum. The reason why there can be no natural labour, when the head is of the ordinary size, in the three last presentations of the vertex, arises from the necessity that the oblique diameter should be confounded with the axis of the pelvis, which cannot occur in case of an ordinary sized head, in consequence of the neck preventing a sufficient flexure of the head.

M. Gendrin, the editor of the *Trans. Medicales*, in a note on the above, agrees with M. Capuron, that it is impossible in a well formed pelvis for the head, when of common dimensions, and with the forehead to the pubis, to pass without assistance; but he says, it is no less certain, that under these circumstances, the head, even when of smaller size than natural, does powerfully press on the perinæum, and that the fourchette is much less compressed than the central portions of the perinæum. In such cases, it may easily be conceived that a rupture may occur at the centre of the perinæum. It may, however, be always possible to prevent its occurrence. Hence, when the practitioner observes the head thus engaged, and descending rapidly along the coccygeo-perineal surface, the direct means of prevention is to support the head itself rather than the perinæum. A curved lever, the lever of Roonhuisen, introduced under the occiput, fulfils completely this indication. M. Mesnard proposes to pass two fingers between the head and the perinæum; but this is insufficient; the fingers must increase the distension, and cannot act with sufficient force: but this is not the case with the lever, a powerful and too much neglected instrument. In employing it, power may be exercised over the flexion and rotation of the head, the occiput can be made to descend more readily, and the forehead at the same time to ascend behind the

pubis, and a labour, which in most cases is terminated by means of the forceps, can thus be effected. The use of forceps also might give rise to the perineal rupture. In cases also where rupture is threatened, in consequence of the small size of the vulva, from cicatrices or other causes, a rupture may be prevented by carefully dividing the fourchette by means of a bistoury, so as to allow the issue of the head. The wound is very much diminished in size, by the subsequent contraction of the parts, and no inconvenience results, while much is hereby prevented. M. Champenois, and also M. Trinchinetti have observed facts of this kind.

IX. CHEMISTRY.

68. *Light emitted during the Compression of Gases.*—A memoir on this subject, by M. Thenard, was read before the French Academy, on the 21st of June last. M. Saissy had observed that two gases, oxygen and chlorine, emit light when forcibly compressed. M. Thenard repeated the experiments of M. Saissy, and found, that if the greased leathers of the pistons employed for compressing the gases be replaced by hat-felt, thoroughly moistened with water, and the cylinder be perfectly clean, the phenomenon will not take place. It is thus proved that the light emitted during the compression of the above mentioned gases, is owing to the inflammation of a minute portion of combustible matter, derived either from the materials of the piston, or from some accidental impurity in the cylinder in which the compression is made. The reason why no light was observed in M. Saissy's experiments, except in the cases of oxygen and chlorine, is that no other gases support combustion. *Journ. de Chimie Méd. No. XVI. Aug. 1830.*

69. *Variations in the Carbonic Acid of the Atmosphere.*—In the *Journal de Chimie Medicale*, No. XVI, for Aug. 1830, an abstract is given of a very elaborate memoir, by M. Theodore de Saussure, addressed by that distinguished chemist to the French Academy of Sciences. The following were his results:

1. The quantity of carbonic acid in the atmosphere, *in the daytime*, is greater in town than in the country.
2. The variations of the acid, dependent on season, are similar in the two situations.
3. The acid is increased more by the influence of night in the country than in town.
4. The air over the lake of Geneva contains, in general, less carbonic acid than that over the ground.
5. In the daytime, the quantity of carbonic acid, in the open champagne country, is ordinarily increased by wind; but this augmentation is too minute to be appreciated, otherwise than by striking a mean result from many observations. The variations which the author observed in the carbonic acid in the open country were due to two principal causes: 1. The opposite changes of night and day; darkness having the power of augmenting, and light of diminishing the proportion of this acid. 2. The condition of the soil, as to moisture and dryness; the former diminishing, and the latter increasing the amount of the acid.
6. The upper strata of the atmosphere contain more carbonic acid than the lower.

The variation of the carbonic acid by the opposite influence of day and night, is hardly appreciable in the upper strata: they appear to be more affected by the slower variations produced in the inferior strata, by a general humid state of the soil.

The variation, dependent on the alternation of day and night, is but small in the streets of Geneva, but it is considerable over the adjacent lake, which offers no obstruction to the lateral circulation of the air.

Lastly, a violent wind in the daytime usually increases the carbonic acid in the inferior strata, but prevents, either wholly or in part, the augmentation which takes place in this gas, in calm weather, through the influence of the night.

70. *Peculiar Vegetable Acid*.—At a meeting of the French Institute on the 9th of August last, M. Dulong communicated a letter from Berzelius, in which he details some curious results in relation to a new vegetable acid existing in tartar. This acid is called in Germany by the name of *voghesensaure* (acid of Vosges). My analysis of tartaric acid, says Berzelius, differing from that of Prout, in whose experimental researches I have the greatest confidence, I was induced to reject it, and afterwards I arrived at the same result with him. But after having analysed the acid of Vosges, I found that it had the same composition and the same atomic weight with tartaric acid. The two genera of salts formed by these two acids, combining with the same number of atoms of water, and the same species being heteromorphous, it remained to be proved that two compound bodies of the same number of elements, and in the same proportions, could present different chemical properties and crystalline forms. This is obviously the reverse of the principle of the isomorphism of compounds, formed of elements of different natures, united in the same atomic proportions.

We already know several examples, similar to that of the existence of two tartaric acids, both among inorganic and organic compounds. Thus we have the phosphoric acid long known, and the calcined phosphoric acid, two peroxides of tin of the same composition, (stannic oxides,) and liquid and coagulated albumen. Berzelius proposes to call compounds of identical composition, but different properties, by the name *isomers*; and to distinguish the different *isomere* combinations, by prefixing the Greek preposition *para*, before the name of one of them. Thus we should have phosphoric acid and paraphosphoric acid, stannic oxide and parastannic oxide, &c.—*Journal de Chimie Méd. No. XVII. Sep. 1830.*

71. *Arsenic detected in Common Salt*, by M.M. A. Latour and Lefrançois.—The salt in question was whiter than natural, and presented numerous crystals, covered with a whitish matter, which was easily rubbed off. When tasted, it left in the back part of the mouth an acrid and bitter flavour. Several members of a family of Paris having been rendered indisposed, this salt was suspected to be the cause, from its appearance being different from that of good salt.

The whitish matter, proving to be sulphate of lime, did not explain the bad qualities of the salt. The experimenters then searched for iodine, which was detected in too minute a portion to be of any consequence. Recollecting that an unwholesome salt used in the canton of Sézanne, had been found to contain arsenic, they examined the suspected salt for that metal, and fully verified its presence both by sulphuretted hydrogen, and ultimately by reduction. The arsenic was in the form of arsenious acid, and in the proportion of a quarter of a grain to the ounce of salt.

The editors of the *Journal de Chimie Méd.* explain the presence conjointly of sulphate of lime and arsenic as follows: powdered sulphate of lime is sold to be mixed with salt, under the name of "soda for mixing with salt." The same powder is mixed by many druggists with powdered white arsenic. Now the editors suppose that in some manufactory where arsenic is powdered, the sulphate of lime has been likewise powdered, for the double purpose of mixing with arsenic and with common salt; and that a portion of the sulphate of lime, used to adulterate salt, has accidentally got mixed with a small portion of arsenic.—*Jour. de Chimie Méd. No. XV. Aug. 1830.*

72. *Hematosin and Globulin*; by M. Lecanu.—A paper on this subject was read before the French Academy of Sciences in August last. The author gives the name of *globulin* to the colouring matter of the blood, brought to a higher degree of purity than in the state called *hematosin*. After having passed in review the labours of Wells, Fourcroy, Berzelius, and Brande, he enumerates the processes for separating the colouring matter, proposed successively by Vauquelin, Brande, Engelhart, and Berzelius. M. Lecanu regards the process of the last mentioned chemist as the best, but has thought proper to introduce some slight modifications in it, with a view of obtaining the matter in the highest degree of purity.

After having divided a considerable quantity of the coagulum of beef's blood, completely drained, into very small pieces, it is treated repeatedly with distilled water, taking care, each time, to subject the remaining mass to a strong compression in linen. The liquor is then filtered, and allowed to evaporate in large plates in the sun. The product of this evaporation is the colouring matter, as pure as it is possible to obtain it by any process yet known. Hematosin, thus obtained, is solid, and black and brilliant, like jet, when viewed in mass; dull and brick-coloured, when in powder; and brilliant, translucent and reddish, in thin pieces. Cold water dissolves it readily, and gives rise to a solution of a beautiful red colour, and possessing an extremely nauseous smell and taste. The solution may be kept for several months without undergoing, apparently, any alteration, and by a spontaneous evaporation, the hematosin may be recovered, possessing its original properties. When exposed to a heat of 158° of Fahr. it loses its colour, and deposits the colouring matter in brown flocks, now become completely insoluble in water.

With muriatic acid, hematosin produces a solution of a nearly black colour, which is not rendered turbid by the application of heat, and from which ammonia precipitates the colouring matter. This solution, according to the author, may be considered as a muriate of hematosin, possessing, as it does, the characters of the muriates; which is the case also with similar solutions of albumen and fibrin in muriatic acid.

According to M. Lecanu, 100 parts of hematosin, taking the mean of three experiments, contain

Animal matter,		97.742
Alkaline carbonates and muriates,	}	
Carbonate of lime and of magnesia,		1.724
Phosphate of lime and of magnesia,		
Peroxide of iron,		534

100.

Berzelius's analysis of the colouring matter of blood, gives, in the 100 parts,

Animal matter,		98.750
Subphosphate of iron,	}	
Phosphate of lime and of magnesia,		0.625
Pure lime,		
Carbonic acid,		
Oxide of iron		0.625

100.

M. Lecanu supposes that the hematosin or colouring matter of the blood of former chemists, is in fact a compound of albumen and the pure colouring matter, which he proposes to call *globulin*.—*Journ. de Chimie Méd. No. XVIII, September 1830.*

73. *Caseiform matter on the Skin of New-born Infants*, by M. Peschier of Geneva.—This matter is white, soft to the touch, insoluble in water, without odour, and having the appearance of cerate. Placed on paper, it produces a greasy stain. Absolute alcohol in the cold has no action on it, but dissolves three-fourths at the temperature of ebullition. Exposed upon a metallic plate to the flame of a candle, it at first diffused the agreeable odour of warm butter, and afterwards curled up, and crackled like fatty bodies, which contain aqueous particles. At a higher temperature, it entered into fusion, emitting the odour of wax and of azotized substances.

From his results, M. Peschier concludes that the caseiform matter of new-born infants is a compound of a fatty substance, of the nature of butter, of modified gelatin, and a little sulphur.—*Journ. de Chimie Méd. No. XVIII, September 1830.*

74. *Siliceous Calculus*.—M. Lassaigne has subjected a urethral calculus from a male lamb to analysis, and found it to consist nearly entirely of silica, joined, however, with some animal matter, and a minute quantity of peroxide of iron.

M. Lassaigne supposes that the urine of lambs probably contains a portion of silica; and we will add that the urine of the animal from which the calculus was obtained, probably contained this earth in excess. Human urine has been proved, by Berzelius, to contain a minute portion of silica, which he supposes to be derived from the water used as drink, which generally contains a minute portion of this earth. No well authenticated case is known of a siliceous calculus in the human subject; but according to MM. Guesnayer, Dumar, and Guibourt, siliceous granules are occasionally voided by the sick.—*Journ. de Chimie Med.* No. XV, August 1830.

75. Penetrativeness of Fluids.—Dr Mitchell, Lecturer on Medical Chemistry in the Medical Institute of this city, has published an interesting experimental paper under this title in the American Journal of the Medical Sciences for November 1830. The facts which he has noted belong to the same class of phenomena, as those observed by Mr Graham on gases, in relation to their spontaneous diffusion through each other, and by Dutrochet, on liquids, under the titles of *endosmose* and *exosmose*; but at the same time furnish a large accession to our previous stock of knowledge on this difficult subject. It would seem that fluids, whether elastic or non-elastic, have different powers of diffusing themselves through each other; and that if they ultimately mix equally, it by no means follows that they have equally concurred in producing the result. Dr Mitchell, in his paper, has principally investigated the modification produced, where the diffusing fluids are separated from each other by thin vegetable or animal membranes, such as sheet caoutchouc, (manufactured by his peculiar process), or pieces of bladder or intestine. Under such circumstances, in the great majority of cases, the membrane is pressed towards one of the fluids experimented on, and from the other. Thus suppose the two fluids be atmospheric air and hydrogen. Suppose the hydrogen to be enclosed in a wide-mouthed bottle, by means of a thin sheet of caoutchouc. The bottle being immersed in the atmosphere, we have the conditions of the two gases named being separated from each other by a plane of thin membrane. Under these circumstances Dr Mitchell found that in a few hours the membranous cover was pressed into the bottle, and finally burst inwards by the pressure of the atmosphere. Upon reversing the experiment, that is, tying up some atmospheric air in a bottle, and immersing it in an atmosphere of hydrogen, the hydrogen made its way into the bottle, bulged out the membrane, and burst it outwards.

In pursuing these experiments, Dr Mitchell found that the diffusing or penetrating power of certain gases in relation to others was so great, that they would penetrate, even where the penetrated gas was subjected to the pressure of a column of mercury, raising such column to a considerable height.

Dr Mitchell ascertained the relative penetrativeness of the following gases with reference to sheet caoutchouc, and arranges them in the following order, beginning with the most powerful:—Ammonia, sulphuretted hydrogen, cyanogen, carbonic acid, nitrous oxide, arsenuretted hydrogen, olefiant gas, hydrogen, oxygen, carbonic oxide, nitrogen.

According to Mr Graham, the comparative diffusibility of the following gases is represented by the following order, beginning with the most diffusible gas:—hydrogen, carburetted hydrogen, ammonia, olefiant gas, carbonic acid, sulphurous acid, chlorine.

It is difficult to explain these phenomena. We incline to believe, however, that penetrativeness and diffusibility are the same thing; that is, assume different diffusibilities, and suppose the membranes equally permeable to all gases, then the phenomena of certain gases crowding into the shut up spaces occupied by other gases, and, when shut up themselves, flying off from their confined situations, may be explained.

We regret that our time and space do not permit us to give a fuller notice of the valuable paper of Dr Mitchell

MISCELLANEOUS.

OBSERVATIONS ON THE BLOOD. BY W. STEVENS, M.D., &c. &c.

[Read at the Royal College of Physicians, May 3, 1830.—London.]

We have to reproach ourselves for not having noticed this interesting memoir in our last number, and in a more formal manner than the present. We had hoped to have presented the subject of which it treats somewhat *in extenso* to our readers, but our intentions must be deferred for a while.

The leading object with the author of the "Observations," is to show that the blood, in the yellow fever, at least the more malignant forms, is then dissolved as it were, and black in both arteries and veins, and bears a close resemblance to the black vomit; so close indeed, that it was often impossible to distinguish the one from the other, when exhibited in a glass. The fibrin of such blood is not formed in the usual quantity, and the saline matters are also deficient, indicated, among other means, by a loss of the saline taste. The dissolved state of the blood, though the effect and not the cause of fever, is, however, the direct cause of death. From these premises, rendered more satisfactory by direct experiments on the blood, Dr Stevens is led to the conclusion, that to correct the chemical changes in the blood, which would be productive of fatal results, saline medicines, freely given, are all important, and are in practice very successful. Blood just drawn from the body is rendered dark and black by acids, and also by the pure alkalies, and becomes fluid and loses many of its peculiar qualities. On the contrary, the neutral salts immediately change the venous blood from a dark modena red to a bright arterial. "Even the salts that contain a slight excess of alkali, as the subcarbonate of soda, for example, mixed, give to venous blood a beautiful bright arterial colour." Still further, "when the neutral salts were mixed with the dark and dissolved blood that had been taken from the heart of those who died of the yellow fever, even this black and dissolved fluid was immediately changed from black to a bright arterial colour."

The treatment of fevers in the West Indies, based on this theory, has, Dr Stevens assures us, and we have entire conviction of the correctness of what he asserts, been eminently successful—"having stood the test in several hundred cases." Dr George William Stedman, now of St Thomas's; Mr Greatrex, surgeon of the royals in the garrison of Trinidad; and others, are cited as corroborating testimony of the uncommon success of this practice. But let us not mistake Dr Stevens—he does not recommend these saline medicines as a specific in all stages of the disease. Where the excitement is high and well marked, he advocates the free use of the lancet at the onset of the disease, and then has recourse to the measures just indicated, to correct the dissolved state of the blood; for although bleeding may prevent the disorganization of parts, and thus retard death, and in some cases directly save life, it is not competent to restore the circulating fluid to its healthy saline and fibinous state.

Dr Stevens says, "it can be clearly proved, that in the West India fevers, those patients that are left entirely to themselves, have a much better chance of recovery than those who are treated with emetics, calomel or antimony, opium,

or acids; and that these remedies, instead of being useful, add greatly to the sufferings of the patients; they decidedly increase the very evils that they are meant to relieve, and add greatly to the mortality in hot climates." We have good reason to believe that Dr S. has some curious documents, which will perhaps find a place in his forthcoming work on tropical fevers, to show that what is here said of the above kinds of practice in the West Indies, will apply too well to the treatment adopted in some of the visitations of yellow fever in the Spanish cities.

Dr Stevens concludes his observations in these words: "after having seen much to convince me that this is the fact, I adopted a mode of treatment widely different from that which I had formerly used, and in as far as it has yet gone, the use of the Rochelle salt, the carbonate of soda, and other active saline medicines, at a proper period of the disease, has been attended with a run of success, to which the mere solidists can produce no parallel; and having so often seen this mode of treatment fairly put to the test, I am induced to believe, that if the practice is generally adopted, the mortality from fever in hot climates will be greatly lessened. So long as we considered fever as a disease of the mere solids, and treated it as such, we had no command over the disease; but from the moment that we considered fever as a disease of both the solids and the fluids, and met it accordingly, we have been able to prevent much suffering, to save many valuable lives, and in those islands where this treatment has been fairly tried, that hitherto fatal disease has, in a great measure, been disarmed of its terrors."

These views of Dr Stevens, distinctly advanced by Bichat, and since corroborated by Magendie, Mayer, and others distinguished in physiology, are, we believe, in the main, now admitted by the most observant pathologists.

We perceive by the number of the *Revue Medicale* for July 1830, that at the session of the Royal Academy of Medicine at Paris, of the 8th of June preceding, M. Gerardin stated, that "he was in the United States at the period when ergot was in its greatest vogue as a means of accelerating the delivery of the fetus, —but so many instances of still-born children occurred, that the government had instituted an inquiry into the causes by which these were occasioned; with the result of this inquiry, he added, he was unacquainted, it not having been published at the period of his departure for France."

On this subject M. Gerardin has, from some cause, been undoubtedly led into an error. The government of this country has never, we believe, directed any inquiry to be made of the nature alluded to; nor are we aware that, taking the whole United States, the proportion of still-born children is greater here than what occurs in Europe. Some inquiry of the kind may however have been instituted by one of the State Medical Societies.

With respect to the ergot, the general opinion of the profession in this country is still favourable. That there do occur many cases in which the article may be employed by the judicious practitioner to accelerate labour, with decided advantage to both mother and child, there can be no possible doubt. But from what we know of the very hasty and indiscreet manner in which it is too often resorted to, we fear that its introduction into obstetrical practice has, upon the whole, been productive of more harm than good.

Bibliothek for Læger. Udgivet af directionen for det Classenske Literatur-Selskab. Redigeret af dens medlem C. Otto, M.D. Kjobenhavn. Vols. 8, 9, 10 and 11.

We have been favoured with the volumes of the Danish Medical Bibliothec for 1828—29, through the politeness of the editor, Dr Otto, of Copenhagen. With the entire contents of these volumes we have been highly gratified—they present a very favourable evidence of the state of medical science throughout Denmark, and of the zeal with which its several branches continue to be cultivated by the physicians of that country.

The Bibliothec is published every three months at Copenhagen, in numbers containing about 200 pages. Each number consists, 1st. Of original communications, the majority of which are of a highly interesting character. 2dly. Of translations and extracts from foreign medical publications. These are mostly

from the French and German Journals—occasionally, however, an article is translated from the English. In this department two papers occur of uncommon interest. We allude to one “on the softening of different organs of the human body, by Dr Hesse of Germany,” and an account “of the treatment of syphilis without mercury in the Hospital at Hamburg, by Dr Frick of that city.” These, and one or two other articles, we should have inserted in our quarterly summary had it not been for their great length and the impossibility of doing justice to them by a further abridgement. 3dly. Reviews and critical notices. 4thly. A summary of medical intelligence. In the latter department we find the contents of our own Journal and of our respected contemporary, the American Journal of the Medical Sciences, repeatedly noticed. 5thly. Miscellaneous articles, generally of a local character. We hope to be enabled to lay before our readers on future occasions frequent extracts from the valuable materials presented by the work under consideration.

The Practice of Medicine according to the Principles of the Physiological Doctrine. By J. Coster, M.D. Translated from the French, 8vo, pp. 319. Philadelphia edition, 1830. Carey & Lea.

Although this work can be considered only as a mere outline, it is, nevertheless, well worth the attention of all, whether students or practitioners, who are desirous of becoming acquainted with the principles of the physiological doctrines and practice. To the more voluminous treatises on these subjects it forms in fact a very excellent introduction.

We have the satisfaction to announce, that the PHARMACOPŒIA OF THE UNITED STATES, revised by the National Medical Convention held at Washington in January 1830, is now in the press in this city, and will shortly be published.

METEOROLOGICAL TABLE.

1830.	Temp.			Diu. Va.		Prevailing Winds.	Rain in Inches.
	Highest	Lowest	Mean	Greatest	Least		
January	51	10	33	18	1	8 N. W.	1.63
February	50	10	30	17	7	{ N. W. N. E.	2.06
March	66	20	41	25	10	S.	4.115
April	78	33	53	29	1	{ N. W. N. E.	1.815
May	78	44	63	21	4	{ N. W. S. W.	3.75
June	80	53	68	20	12	{ N. W. S. W.	5.99
July	90	60	76	17	2	{ S. W. N. W.	4.07
August	86	58	72	20	14	{ S. W. N. W.	3.87
September	83	44	64	17	4	{ S. E. N. W.	2.93
October	70	46	54	23	10	{ N. W. N. E.	4.31
November	65	36	50	14	6	N. E.	5.35
December	60	8	37	13	7	{ N. W. N. E.	5.18
Av. tem. for the year			53	Total Rain		45.07	

610.5
186
175 V. 11

Unauthenticated
from P. B. Goddard

THE
NORTH AMERICAN
MEDICAL AND SURGICAL
JOURNAL.

PUBLISHED UNDER THE AUSPICES OF
The Kappa Lambda Association of the United States.

NON DOCTOR, SED MELIORE IMBUTUS DOCTRINA.

V. 11
NO. XXII.
APRIL 1831.

Philadelphia:

PUBLISHED BY JAMES KAY, JUN. & CO.
No. 4, Minor, near Fifth Street.

SOLD ALSO BY JUDAH DORSON, 188 CHESTNUT STREET; AND J. G.
AUNER, 323 MARKET STREET.

PITTSBURG: JOHN I. KAY & CO. 95 MARKET STREET.

LONDON: J. MILLER, 49 Pall Mall.

PARIS: A. BERTRAND.

Printed by James Kay, Jun. & Co. Printers to the Medical and American Philo-
sophical Societies, No. 4, Minor Street.



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NORTH AMERICAN
MEDICAL AND SURGICAL JOURNAL.
APRIL 1831.

ART. VIII.—GAMA ON INJURIES OF THE HEAD.

Traité des Plaies de Tête et de l'Encéphalite, principalement de celle qui leur est consecutive: ouvrage dans lequel sont discutées plusieurs questions relatives aux fonctions du système nerveux en générale. Par J. P. GAMA, D.M., Chirurgien en chef, premier professeur à l'Hôpital militaire d'instruction du Val-de-Grace, &c. &c. &c. Paris, 1830.

THE author of the work, the title of which we have given, holds a distinguished rank in the profession in France. Being an army surgeon, and a professor, as well as surgeon in chief, at the military school and hospital of Val-de-Grace, his experience has been ample; and being a colleague and a disciple of the French medical reformer, Broussais, he has attentively studied the physiology and pathology of the nervous system; while he has presented his practical knowledge in a scientific form much to his own credit, and, we trust, to the benefit of the public. In this treatise, devoted to the sequelæ of cerebral injuries, we discover a strong and judicious mind, operating on

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intricate and difficult subjects and on the numerous unconnected and apparently opposing facts hitherto collected by the industry of practitioners; and, by endeavouring to reconcile difficulties and to bring order out of confusion, impressing its own character on the production before us. Little, perhaps, really novel, is presented, whether in fact or opinion: but the whole is judicious and valuable, as presenting the latest systematic work on injuries of the brain, as coming from the physiological school of medicine, as recording interesting facts, and as examining questions of great intricacy and importance in relation to the nervous system; while the author generally avoids extremes, and is usually satisfied in not pushing his deductions beyond the bounds to which his facts should restrain him. Exceptions to these remarks we shall have occasion to point out in the short analysis, or rather summary of the author's opinions, which we shall present—without undertaking to afford a complete view of the disputed questions, or even of the facts and arguments deduced by the writer. For these we must refer to the book itself; our limits are too circumscribed.

Before entering on this analysis, we have one word to say on “physiological medicine,” so called. This expression has been introduced by Broussais and his disciples, most fortunately for their success, and arrogated with much self-complacency to their own system—while all other physicians have been ridiculed as “ontologists,” as believers in disease—being a separate ens, or being, superadded to the system, and, like some little demoniac, preying on one or more organs, or rapidly changing his place as caprice may indicate. We protest against all such representations; we have never known an ontologist; we doubt that any such exist, or even have existed among men of reputed science. All scientific physicians are indeed physiological physicians; and the main distinction between the present dogmatic teachers of new doctrines and their predecessors or opponents, consists, first, in the difference of their physiology, and secondly, in the support or denial of the opinion that all diseases are simply an increase or diminution of organic actions. That many are, cannot be doubted; but that many complaints are truly specific, that is, induced by a peculiar cause, and manifesting phenomena not deducible from the normal or physiological actions of the part, seems to us as little capable of dispute. We hate proscription in medi-

cine as in politics, and cannot regard the cause sound which requires its support. While we have a high respect for the principles of the new French school, and are sensible of their utility to the profession, especially in France, we are not its disciples, although we claim as anxiously as any, the title of physiological physicians, and disclaim any and all ontological notions. We have thought these explanations due to ourselves and the profession, especially when noticing, with commendation, as we frequently do, the productions of the Broussais school.

The present work is divided into chapters and subdivided into articles; the most important facts being illustrated by appropriate cases, detailed with the minuteness characteristic of the clinical schools of France.

CHAPTER I. *Wounds of the head restricted to the exterior parts*,—that is, to the bone and membranes, as well as the scalp. Wounds of the cerebral substance are also included, provided there are no permanent symptoms of concussion, compression or inflammation of the brain.

Article 1. *Of wounds properly so called.* Punctured wounds with pain and irritation are to be dilated, says our author, and then treated by compression. We conceive this direction much too general. Punctured wounds as such do not demand dilatation, and this operation should not be performed without a specific reason; as, the removal of foreign bodies, the securing of arteries, the liberation of inflamed tissues from fascia, &c. &c. Otherwise the usual treatment for wounds by adhesive strips and moderate pressure, and by preventing inordinate inflammation, is alone requisite.

Dr Gama is a strong advocate for the modern doctrines of adhesion as first promulgated by the Hunterian school in England, and he extends them to all wounds of the brain, penetrating or not penetrating, after the foreign bodies and splinters have been removed, and the hemorrhage arrested. While every surgeon of science and experience must acknowledge the great advantages of this practice in penetrating wounds of the head, yet many hesitate as to its general propriety in such accidents, as being sometimes productive of dangerous symptoms, especially where the brain itself is wounded. Our author notices two objections which have been advanced against

the immediate closure of severe and extensive wounds of the brain and its membranes: as first, the danger of hemorrhage occurring, and not being detected if the wound be accurately closed, whence result confinement of the blood, compression, irritation, &c. But there is no necessity, says our author, of closing the wound until the hemorrhage has been arrested, as it will then not be too late for union to occur; and there is no reason to expect a consecutive hemorrhage.

The second objection, that pus will be deposited within the cranium, is equally untenable. The idea that suppuration is necessary for the healing of cerebral wounds, can no longer be maintained; for facts abundantly prove that each tissue involved is capable of direct adhesion, not excepting the cerebral substance and even the bone; in this last it often occurs even without exfoliation. The oozing of sero-sanguineous fluid is preparatory to adhesion, and therefore beneficial; and there is probably no danger of this fluid ever collecting in such quantities as to be injurious; as owing to the proximity of the fluid to the surface, the separation of the fragments of bone, and the fixed condition of the brain, it will naturally escape by a sort of infiltration. Absorption also occurs very rapidly even in the cerebral substance, and even should inflammation and abscess result, these should not be attributed to the attempt at immediate union; for reunion, as will be hereafter shown, will have a tendency to prevent encephalitis. It can also be affirmed, that even if union has occurred in the skin, the effused fluid will present itself under the skin, and cause an ulceration of the cicatrix for its discharge; and on the other hand, should an injurious collection even occur, nothing would be easier than its immediate evacuation by the division of the cicatrix.

While approving of the practice here recommended, we would insist on great attention being paid to the discharge of this sero-sanguineous fluid, even when collected in but small quantities; as by keeping the edges of the wound separate, it retards or prevents immediate union, increases the liability to suppuration, and may induce symptoms of compressed brain; and although its usual tendency is external, yet large quantities may flow into the arachnoid cavity before adhesion occurs between the opposing surfaces of the arachnoid mem-

brane, as covering the dura and pia maters. Let the adhesive strips be lightly applied, the dressings be simple lint or ointment, and all pressure be most carefully avoided.

Article 2. *Fractures of the cranium.* Some observations are made as to the manner of their occurrence, and as to the important fact, that they may occur without any concussion of the brain, or any internal injury. The diagnosis of simple fractures is not always easy, and is of so little importance that no extraordinary measures for its detection are justifiable, especially as they may thus convert a simple into a compound fracture. In compound fractures, foreign bodies, if accessible by instruments, should be abstracted; loose or movable fragments are to be removed as much as possible, especially when driven into the brain or causing symptoms of compression; and the hemorrhage arrested. These being accomplished, "it remains to facilitate the immediate union of the soft parts, whatever may be their condition, or whether there be any loss of substance or not in the bones which they should cover. There is no necessity for interposing a wedge of wood or any other substance between the lips of the wound to facilitate the discharge of fluids, as recommended by Giraud of the Hotel Dieu, and by the authors of the article *Trepan* in the *Dictionnaire des Sciences Medicales*."

Article 3. *Operation of trephining.* Our author records a severe philippic against the use of the trephine, being a genuine disciple in this respect of Dessault, to whom the credit is due of greatly restricting the employment of this instrument, and of exposing the unscientific and really horrible practice of his contemporaries and predecessors. As many may, at this time, lightly resort to this operation, we will give the following summary of its dangers from our author. "To expose to the atmosphere an inflamed organ; to place the same agent in contact with a sound surface by which inflammation will be excited; to evacuate the product of diseased action without removing the cause; to accomplish no benefit in cases of extensive and deep seated effusions; to be of no service in cases of trifling collections of fluid which will be readily absorbed if the organization be restored to a healthy state; not to facilitate exfoliation in cases of fracture, and to retard it when in progress; are some of the objections which may be urged

against the trephine." P. 51. M. Gama also observes that prudent practitioners will almost in every case reject this operation, even in those cases in which it has been urged as a dernier resource. He argues, that when the cerebral affection resists the usual modes of treatment, it is no reason for confiding the cure of it to chance—to what is termed the last remedy. No one can fix the limits of our rational modes of treatment, especially in diseases of the brain, where wonderful recoveries have occurred when there was very little hope. The anti-phlogistic course proves advantageous, not only in relieving the inflammation, but also in facilitating the absorption of fluids.

Although granting the truth of most of these propositions, and condemning the frequent use of the trephine as much more injurious than useful, yet we cannot regard the operation as more deleterious than the formation of internal abscesses, or believe that the removal of the pus in such cases will be improper. It seems that our author does not believe that the collection of pus, by its pressure, aggravates the inflammation, resists the influence of remedial measures, or continually increasing in quantity, augments the ulcerative inflammation of the cerebral mass, while the symptoms of compressed brain are thus caused, and often aggravated to a fatal result. There appear to us much stronger reasons for opening such abscesses, than those which collect in any other tissue: and we should therefore say, that when antiphlogistics do not answer, when the patient, with the usual symptoms of inflammation, suppuration and compression of the brain, does not improve, the operation should be performed, and that it thus constitutes, not an irrational, but decidedly the most rational plan of treatment. Of this, more hereafter, when on inflammations of the brain.

CHAPTER II. *Wounds injuring the membranes and the brain.* These, when most severe, demand the same treatment as those already noticed; but in many cases, other consequences result, which do not characterize simple wounds, and which are to be recognized chiefly by sympathetic affections. These consequences are known by the name of concussions or commotions of the brain. Of these, there are various degrees; they are only to be regarded as a pathological state when there is stupor, or other affection of the vital powers, which remains for

some time. Concussions may occur directly from blows on the head, or indirectly from falls on other portions of the body.

Article 1. *Direct concussion.* The symptoms of concussion we need not transcribe; they are accurately detailed by our author, who believes that they are indicative of a depression (*un affaiblissement*) of the powers of the brain. "In some cases, there is a sudden abolition of all nervous influence; vital power is destroyed, and death occurs instantaneously." Much has been said of the state of the brain in concussion. Perhaps a large number of existing pathologists are still so mechanical in their notions, as to admit of no concussion, or indeed of any disorder, without rupture of tissue or some other structural derangement. We have, however, long believed and taught, that in concussion there is necessarily no rupture; that the symptoms are altogether independent on any solution of continuity or on effusion upon the cerebral mass, being indicative simply of loss of power, temporarily or permanently. We shall translate some observations of Gama on this point, who, we are pleased to find, advocates similar sentiments.

"Many examples are cited of dreadful concussions, accompanied by the sudden destruction of the principle of life. From these, we may refer to what occurs in milder cases, where the actions of the organs, which are merely suspended, and their functions apparently annihilated, soon resume their energy and regularity, and where it will be difficult not to admit, that the concussion, carried still farther, would have destroyed completely in the organic tissues the power of reaction, without any necessity, in order to explain the cause of death, to suppose a lesion, appreciable or material in the structure of the brain. The contrary opinion is however generally admitted: many do not separate concussion from lesions of structure, which ought, say they, to accompany it; they cannot conceive that it should be otherwise. There can be no doubt, that these frequently co-exist, but is this always the case? Do we not observe various causes producing sudden death, without any physical derangement of the very complicated (*déliées*) fibres of the organ of perception? There are some passions which cause cerebral depression, analogous to that which results from a violent concussion: as excessive fear, a sudden unexpected joy, &c. All know how carefully we must conceal danger, or announce news which will excite lively emotions, when individuals are sensible and nervous. Exciting passions, such as anger, cause in their development a commotion (*cbranlement*) very remarkable; all strong impressions,

indeed, suddenly made, are felt in the brain before it reacts on the injured organ, and can, by the disturbance they excite, annihilate its powers. It is evidently, by the commotion felt at once in the brain and in all parts of the individual, but principally in the nervous system, that lightning, or a powerful electric discharge, causes death with so much rapidity. Although lightning has various destructive effects on the human body, it is no less true, that it often leaves no trace of its course; that it kills as a subtle poison; and that absolutely it does not in any respect alter the structure of the tissues. Commotion has alone operated in these cases, as Franklin himself imagined. Finally, when a body of large size but small weight kills by falling upon the top of the head, is it not to the complete destruction of the vital power that this effect is generally owing?" P. 66.

We may add that actual minute dissection, by experienced anatomists, has not revealed any lesion of structure in many cases of death from concussion. The author alludes to some interesting points relating to this subject, in the form of questions, to which answers cannot be satisfactorily given in the present state of our knowledge, although any pathologist might present his own explanation.

"Concussion no doubt affects particular portions of the brain more than others, and in the same manner. If this affection be without alteration of structure, would there be partial death in the brain?"

"Would the part, thus deprived of the power of receiving impressions and of transmitting sentiment, then enjoy more than a vegetable life? would it remain in this state in the midst of those which had preserved their privileges?"

"Is it to this loss of vital power in a circumscribed part of the brain, that we must attribute certain partial and permanent paralyses?"

"Is it to the same cause that the alteration in certain intellectual functions should be referred, when the senses and movements are unaffected?"

"Have certain diseases, as epilepsy, which are manifested after a fall, the same origin?"

"Will it accord with observation and facts, that ruptures of the brain should be present to explain these phenomena, especially when concussion has been followed by no other kind of accident?"

Article 2. *Indirect concussion of the brain.* This arises from falls or blows acting through any portion of the body except the cranium itself, and does not essentially differ from

direct concussion. The author has made some experiments (by means of an artificial brain, formed of a glass matrass filled with a solution of isinglass of about the same consistence as the brain) to determine the manner in which blows, whether direct or indirect, affect the brain.

Indirect concussion, operating through the spine, can never produce a separation of the dura mater at the point opposed, viz: at the summit of the head, nor occasion, when the force is of the same intensity, an affection of the brain as powerful as when the percussion is direct. It is hence more frequently exempt from complication, and reduced to a state in accordance with the strict acceptation of the word, concussion.

Article 3. *Concussion with organic lesions of the brain.* Solutions of continuity in the brain or its membranes, which may complicate concussions, do not necessarily involve any alteration in the vital power or influence of the nervous mass. Contusions and fractures often exist without concussion, and heal readily. Ruptures of the fibres of the brain may occur, from the slightest degree of contusion to disorganization more or less complete; these last of course being followed by death, usually suddenly. Partial or circumscribed disorganization may exist without any immediate bad symptoms, and may sometimes be followed by recovery, as has not unfrequently been observed from gun-shot wounds of the head, where the ball has passed with great velocity. Concussion has been almost nothing in such cases. In all solutions of continuity, there must be some hemorrhage; this is often trifling and much diffused; when in large quantities bad effects result, which will be hereafter noticed.

Wounds of nerves and of the brain unite by adhesion—cicatrices are formed, and the integrity of the functions is fully restored; and “it is a practical remark of importance,” says our author, “that contusions and moderate ruptures of the brain are not only susceptible of cure, but during this process the functions of the brain are often undisturbed. This organ, notwithstanding its injury, influences, as usual, all parts under its empire; it supports its normal relations with the organic nerves; and the fibrillary reactions of the (sentient) surfaces irradiate towards the brain with equal regularity; indeed life exists in all its plenitude, and individuals believe themselves

in perfect health." P. 84. But usually, inflammation is inordinate, and injurious consequences from effusion, suppuration, ulceration, &c. follow, sooner or later, impairing or destroying the functions of the cerebral mass.

CHAPTER III. *Paralyses which follow wounds of the head.*

"The impossibility of voluntary motions results from lesions of the spinal marrow, or the brain; but since it is the parts below the place of injury which suffer from the interruption of the nervous influence, we must rise to the brain as the only source of motion. The contrary opinion will be in opposition to the well demonstrated principle of the unity of action in the nervous system. The inferior portions of the system are merely the organs of transmission of the cerebral volitions. The communications of the splanchnic ganglions with this apparatus serve to draw from the common source the elements of nervous influence, without which even the great sympathetic nerve would be inert. In a word, there can exist no vital movement without the agency of the brain among those beings which are provided with this organ, any more than the circulation can be continued without a heart, or without that which supplies its place in certain species of animals." Such are the general sentiments of our author as to the influence and importance of the brain acting on all the organized portions of our system, by means of its various dependencies. This subject he follows into minute and valuable details, endeavouring to illustrate the physiology by minute attention to the phenomena and consequences of disease, as well as by the more common methods of observation and experiments on living and healthy animals: illustrating physiology by pathology; perhaps the best means for its successful cultivation. We shall endeavour succinctly to present his opinions, but we cannot examine his arguments for their support, or his criticisms on other physiologists, both of which deserve attention.

He believes in the *localization* of cerebral faculties, and hence that alterations of a determinate portion of the brain will paralyse those organs dependent on it, and whose nerves proceed from the point of lesion. Little however is known of the mechanism of these cerebral faculties, or of their mode of influence.

We are several times cautioned not to confound true paraly-

sis with the impossibility of exciting motion as arising from other causes; for example, individuals in a state of coma are insensible to impressions, and of course manifest no motion in their voluntary muscles. This is not a paralysis, but merely a quiescent condition from torpor of the brain.

The author believes that little or no dependence can be placed on vivisection in illustrating the phenomena of the nervous system, from the great disorder which necessarily results, from the difficulty of completely isolating any individual organ, from the influence of exposure to air, &c. in these operations. He disbelieves the present generally received opinion of the existence of particular nerves for sensation, for motion, and respiration. "The nervous action which constitutes sensibility, cannot, in my opinion, be separated from that which presides over motion; one cannot act without the other; or rather both are identical. The various shades of sensation or perception, and those, not less varied, of motion, are uniformly confounded in the several organs. Cabanis has observed that every impression which is perceived produces motion. No line of demarcation exists between the mechanical or contractile movements and those which are inseparable from sensation: nature passes from one to the other by insensible gradations. There exists in our organization only one vital principle, from which arises sensibility, and everywhere the actions of life consist in the effects of sensibility, accompanied by motions more or less extended, rapid, and capable of impressing the senses of the observer. We may therefore conclude, that all paralyzes are lesions of the same nervous property." P. 90.

Of course our author does not leave unnoticed the works of Mr C. Bell, or of M. Magendie and their coadjutors; but he criticises them, particularly the former, very severely; points out the inconsistencies, and even the contradictions of which they are guilty, and certainly, taking into view the whole train of his observations and facts, has gone far to invalidate their opinions, or at least to render it desirable that new experiments and facts should be brought to bear on this most intricate and important subject. He quotes M. Lallemand (p. 274 of the 11th letter of his anatomical and pathological researches on the brain) as the physiologist who has best explained the

double property of sensibility and motility of the nervous system, and as having happily resolved the problem of incomplete paralyses, viz: the persistence of sensibility when there is loss of motion. "Always," he says, "when paralysis interests only the muscular system, it is feeble; which is tantamount to saying, that sensibility continues longer than motility. But voluntary motion of a limb is the result of a spontaneous action of the brain. The perception of the impression produced at the extremity of a nerve, is an act independent on the will, which consequently does not demand that the brain should spontaneously act. It can easily be imagined that a portion of a diseased brain may be sufficiently altered as not to exert an active influence over the nerves dependent on it, and yet not so much so as not to receive impressions collected by the same nerves. What proves the truth of this explanation is, that patients may sometimes be observed, who, enjoying sensibility, but not capability of moving voluntarily a paralytic limb, nevertheless retract it, when the skin has been severely pinched."

Sect. 1. Sudden paralysis from rupture of the brain. The sudden and momentary insensibility and immobility from certain concussions of the brain do not deserve the name of paralysis, which gives an inadequate idea of the lesions of organs that take place. But paralysis may be of short duration, and may result sometimes from cerebral ruptures, and then the alterations of nervous texture have a perfect analogy with those which occur at the end of certain apoplectic attacks. Our author examines sudden paralyses as they affect the intelligence, the organs of sensation, or of voluntary motion.

Article 1. Loss or perversion of intellectual functions. M. Gama adopts the outline of Gall's doctrines of phrenology; the mental powers have for their special organ the anterior portions of the cerebral hemispheres; but these lobes have a marked influence on the functions supposed to be dependent on the posterior lobes of the brain. The intellectual functions therefore result from cerebral operations more or less complicated, of which the variety depends chiefly on our impressions. The divisions and subdivisions of the cranioscopist are too arbitrary; we are born, not with a number of cerebral organs,

completely formed, but with certain aptitudes, moral, industrious, scientific, &c., all having a more particular tendency to the anterior parts of the brain. The different faculties of mind, as well as the individual organic aptitudes, can be weakened or destroyed in consequence of cerebral injuries. Thus memory is sometimes destroyed while the judgment and the will remain sound: and sometimes the judgment is abolished while the will and memory remain. These and other singularities M. Gama would seem to refer, not simply to the wound of the brain, but to the concussion of the nervous mass; neither would he use the term, *paralysis*, as applied to them, as motion, voluntary and involuntary, is still continued. Intelligence may be weakened, disordered, or rendered incomplete by the loss of one or more of its faculties for a variable time, but a paralysis of the organ would cause all the vital phenomena to cease instantaneously, and death would result.

Article 2. *Loss, or marked diminution of the sensitive functions.* Paralysis of the organs of sense is comparatively unfrequent, even in cases where the muscles of the apparatus are affected; the taste, for example, is seldom impaired, should there even be a paralysis of the muscles of the tongue; hearing and sight are more frequently involved. Hearing not unfrequently is injured from a concussion of the internal ear; while vision is chiefly affected by cerebral concussions and congestions.

Article 3. *Paralysis of voluntary movements.* There can be no combined or regulated motion without the agency of the brain; this organ is necessarily the regulator as well as the source of all combined movements. The mechanism by which this is effected is not understood; it can be merely observed that the nerves are the agents, the inferior divisions of which are lost in the muscles, while their superior extremities, entering the brain, terminate at the seat of volition, the intellectual centre, which they assist in forming conjointly with the nerves of sense. Thus the same organ presides over the intellectual faculties, the sensorial perceptions, and voluntary motions.

It has not been found that the cerebellum, when most injured, produces any paralysis in the limbs, or that it is usually more concerned in our exterior movements than in the mani-

festation of our intellectual faculties. It would seem to preside chiefly over our involuntary actions, and the unity of action in the nervous system is preserved by intermediate nervous cords, establishing an intimate communication between those parts which are subjected to or removed from the influence of the will. The eighth pair is the most important of these nerves, and a lesion of that portion of the brain to which it corresponds, by paralysing the respiratory movement, which is connected with all others, would cause speedy death. This indivisibility of the nervous system can alone explain the vital phenomena in health or disease.

Paralysis may arise, therefore, from injury of the brain, as well as of the intermediate nervous cords between this organ and the muscles concerned: and hence M. Flourens is incorrect in supposing, that the brain being injured, the principle of motion would continue to exist in the tubercula quadrigemina, in the medulla oblongata, or in the medulla spinalis, as these are mere agents for the sentient and perceiving extremities of the nerves. Injuries of one cerebral hemisphere are followed by a paralysis on the opposite side: but there is no reason for believing that the fibres from the cerebellum decussate each other. Many observers have remarked that the movements of respiration have suffered at the same time with those of the limbs, but they have not hence deduced the consequence of the identity of the source of motion for both. But respiration often preserves all its energy in hemiplegic patients, as other muscles supply the functions of those which are paralysed; the muscles of the shoulder for example often act when the intercostals of the same side are inactive. "We have remarked also a defect of innervation in one portion of the circulatory system; this weakness does not proceed from the heart, since the arterial pulsations on the opposite side have an almost febrile excitement."

Sect. 2. Paralysis caused by inflammation of the brain The author in the preceding section does not state very explicitly how paralyzes result suddenly from injuries of the brain, but seems to believe that they are dependent on concussion, and not on the mere fact of rupture of the brain. He however seems inclined to the opinion that in most cases there must be some actual derangement of structure in a por-

tion of the brain, which is the essential cause of paralysis; that simple pressure, or even concussion, can seldom be deemed sufficient. He now observes that inflammation of the brain, however obscure or chronic, may, by altering one or more portions of this organ, give rise to paralysis, and proposes to examine on what organ the cerebral affection manifests its effects—and what are the nervous agents whose functions it destroys.

Article 1. *Injury or loss of the intellectual functions.* The loss of the intellectual faculties can only be partial, if complete existence would cease. Of these, the will exists the longest, and if this should fail, from the inflammatory congestion, the instinctive movements would not remain after the movements of relation are destroyed; hence death results. The brain therefore is essential to organic life.

During inflammation of the brain there is delirium, or a sudden exaltation or perversion of one or more intellectual functions, not referrible however to an affection of any one portion of the hemispheres, as each of these affections can exist alone, while the brain preserves the exercise of the remainder of its functions.

The exercise of speech is enumerated among the intellectual actions, and this is often suspended by cerebral inflammation. Can this be owing to a paralysis of the tongue? Our author thinks not: because the complicated apparatus for the exercise of speech is not simply confined to this function, but is concerned in mastication, deglutition, the exercise of taste, of respiration, &c.: and we cannot conceive that there could be a paralysis of the apparatus without involving these other functions. In truth, the exercise of speech demands, 1, the intellectual act; 2, the formation of sound; and 3, the muscular movements for articulation. If one of these be absent, speech is lost. If there be no ideas formed, or no voice from injury or paralysis of the larynx, the integrity of the muscular apparatus of the face and tongue will be of no avail—the patient will be silent. Hence the loss of speech is not the result of a partial paralysis, but almost always an important phenomenon, indicative of the nature and seat of cerebral affections.

Article 2. *Consecutive loss of the sensitive functions; 1, of*

their nerves in the interior of the cranium, and 2, of the anterior part of the brain. In the organs of sense, we observe the proper nerve of perception, and also the apparatus destined to convey to it, and to modify at the same time, the materials for its exercise. In the eye there is the optic nerve, and also the apparatus of the globe and its appendages, which are furnished with other nerves by which the various portions are most intimately associated. A striking distinction should be made between the nerves of sense and those of the apparatus for sight, hearing and smelling—the functions of the former depend however on the integrity of the latter, and are capable of being rendered active or feeble, as the nerves of the apparatus are excited or depressed.

A similar distinction cannot however be made for the function of taste. Anatomists have in vain hunted for a gustatory nerve; some have thus regarded the lingual branch; others the hyperglossal; even the glosso-pharyngeal has been suggested, but none imagine that it can exclusively enjoy this prerogative. There can be, says our author, no gustatory nerve, as none of the various surfaces of the mouth can exercise this function alone, unconnected with the others. The most savoury body cannot be tasted when placed simply on the tongue, or on the palate; but gustation results from the combined action of opposing surfaces. Taste is not confined to the tongue; of course no nerve of this organ can be exclusively a gustatory nerve.

In investigating the functions of the senses, much has been accomplished of late years by experiment and observation;—the vital accessory actions have been elucidated, but the degree of their importance has not been established. M. Magendie has even maintained, as is well known, that perception is not reserved exclusively to the proper nerves of sense, but that the fifth pair contributes directly in transmitting to the brain the sensorial impressions. Our author devotes much space to the detail of cases and observations whereon to prove that the fifth pair of nerves, however important as an accessory nerve to the tissues involved in the sensual apparatus, cannot be a substitute for the peculiar nerves of sense, as the olfactory, optic and auditory: and also to show that the functions of this trigeminal nerve and those of the portea dura are identi-

cal; that neither is exclusively a nerve of feeling nor of motion, but that both are nerves for sensation and motion. The details are very interesting and valuable, and throw much light on this intricate and important subject of nervous agency. P. 192.

M. Gama also endeavours to prove, p. 203, "that the seat of the perceptions, that of sight as well as of the other sensorial functions, exists in the anterior part of the brain."—And, p. 212, he observes that "the accidents resulting from a percussion of the cranium are often attributed to a commotion which the eye has sustained, which are however the consequence of a concussion of the brain."

Article 3. *Paralysis of voluntary motion from cerebral inflammation.* Cerebral inflammations from wounds pass through different stages before there is an actual loss of motion in the muscles. Spasmodic muscular contractions, convulsions, subsultus tendinum, precede paralysis, and announce the progress and intensity of the cerebral affection. The disorganization from inflammation, which induces paralysis, comes on gradually, and during its stages, the irritated brain stimulates the muscles and excites them with violence. With few exceptions, it is usually impossible to ascertain the location of the injured portion of the brain in cases of paralysis, which would not be the case if the functions of the different portions of the brain were independent on each other, and perfectly known. The nervous mass enclosed within the cranium forms a system, of which each part contributes by its action to the functions of the whole. Experience and reason indicate that in those parts, folded (replicés) on themselves, contracted towards the base, the anterior and posterior have destinations which are not exactly the same. But ought we to imagine with Willis, that the cerebellum presides exclusively over the interior functions? Our author answers this negatively. He says that no part is independent of another; that the cerebrum and cerebellum co-operate in their influence on other organs. The cerebrum, which modifies the action of the viscera, alone directs the voluntary movements; and paralyzes, attributed to the cerebellum, have had for their origin some concomitant cerebral alterations: and a great number of observations, worthy of confidence, prove that considerable disorganizations of

the cerebellum have caused disorders more or less marked of the internal functions, disorders which are reproduced in cerebral diseases not followed by paralysis.

Our author also seems opposed to the phrenological doctrine that the two hemispheres of the brain, for any other functions than the muscular action, are capable of acting for each other reciprocally, and an affection of one may, in certain cases, be unknown, the other continuing to act. He maintains that in all the voluntary and sensorial functions, the two hemispheres are so intimately connected that they must act simultaneously. The duplicity of exterior organs exhibits nothing else, relatively to their cerebral relations, than two radii departing from the same centre. Hence the puncture of one nerve of an extremity will often excite general convulsions.

CHAPTER IV. *Compression in general.* Compression arises from ruptures or contusions of the brain or its membranes, and also from inflammation, giving rise to effusions, and also to the production of solid bodies encroaching on the cerebral mass. Our author undertakes to demonstrate that paralysis is never the result of compression alone; a sentiment very different from that of most practical writers.

Article 1. *Sanguineous effusions.* The diagnosis of these is acknowledged to be very vague: for the injury of the brain is followed instantaneously by symptoms of concussion, and effusion usually occurs before these have disappeared, the symptoms of which can hardly be distinguished by the most experienced from those of concussion. Even where there is an interval of intelligence between concussion and compression, and effusion may be suspected, yet some other change may have occurred in the brain after the disappearance of concussion, giving rise to phenomena similar to those from effusion; as, for example, a sanguine congestion from the cerebral injury. Experiments on animals have not established the common opinion; for mere compression, where the texture of the brain was not injured, did not produce paralysis; when this effect resulted there was lesion of the cerebral mass.

Clinical observations confirm these views, for every surgeon is acquainted with cases in which no bad consequences immediate or secondary have resulted from compression suddenly or slowly induced, when the brain is uninjured. Cerebral irri-

tation is the real cause of the paralysis attributed to effusion; and it is certain that sensation and motion are never destroyed so long as the blood remains wholly in the vessels. There may result from this state an oppression of the nervous mass, a suspension more or less prolonged of voluntary actions and perceptions; but these are at once relieved by free sanguine evacuations. Neither will any interruption of cerebral influences be caused by a congestion of blood in the vessels of the membranes of the brain: meningeal apoplexy, so called, has really no existence. There must be a cerebral irritation, as the only cause of all these accidents. The author endeavours to support these opinions by a statement of cases, and commentaries thereon, although with much plausibility, yet we think not satisfactorily. Our readers must refer to the work itself for any argumentative details.

Article 2. *Purulent effusions.* Much pressure is exercised by pus deposited on the surface, in the ventricles, or in the substance of the brain, and this is often accompanied by deleterious consequences, which have been referred to compression. But numerous cases can be easily adduced, says our author, to show that most extensive collections have occurred without any notable disorder in the cerebral functions.

Should a patient, some time after a fall on the head, have somnolency, dulness, a sort of torpor in the extremities, these may arise from an abscess; but when in addition there are headach, coma with a hot forehead, inaction of the sensitive organs and loss of muscular contractions, we have indications, not of increased pressure, but of cerebral inflammation.

Article 3. *Formation of cysts.* These are observed in all parts of the body as the result of inflammation, and of course in the brain also. They are analogous to the mucous membranes, and are capable of inhaling and absorbing. Abscesses are sometimes discussed, when the opposing surfaces of the cyst approach and unite, forming a linear cicatrix. Sanguine effusions often become enclosed with a cyst, by which the fluid may be absorbed. These cysts rarely become in any way injurious. They neither cause nor increase the paralysis.

Article 4. *Morbid solid substances,* which are not the result of inflammations of the cerebral mass, or originally developed in this substance, but arise from the dura mater or

other tissues, often cause great depressions in the brain. The compression however which results, is not followed by any injury to the functions of the brain, it is inoffensive to the nervous system, and will not produce paralysis.

We have no comment of importance to make on the doctrine here advocated—but acknowledge we are not fully of the author's opinion on the subject of compression. We regret that he has not more clearly indicated the evils from compression, however induced, as sometimes he alludes to pressure as never injurious, and again as causing stupidity, somnolency, imperfection in the muscular movements, &c. Facts can alone decide this question, and we considered it actually proved, that under certain circumstances, (what is not certainly known,) pressure will cause paralysis; but if the facts adduced by M. Gama be perfectly correct, the opposite sentiment may (however difficult to believe) nevertheless be true. Our own experience is not sufficient to form a judgment on this matter.

CHAPTER V. *Cerebral morbid sympathies.* In this chapter the author endeavours to point out the sympathetic derangements which result in the various organs of the body from injuries of the head, having before confined himself to those phenomena which involve the brain and its prolongations. He assumes it as a fundamental fact, "that all the actions of the economy, not excepting those of nutrition, have their principle in the nervous system;" but he also maintains that the nervous apparatus cannot maintain its own life without a supply of arterial blood; and, of course, that the circulatory system would soon fail without a supply of fresh materials from the digestive organs, and these last are also dependent on the nervous and vascular systems. These three organs, the brain, heart and stomach, "form a vital tripod, on which as a pivot roll all the organic actions; the study of the laws which regulate them serves as a basis for all physiology." He also regards the nervous system, not only as containing the principle of life, but as the source of the sympathies, the origin of all the actions of the economy. These views he amplifies in tracing the effects of injuries of the head on the *digestive*, the *genito-urinary*, the *respiratory*, the *circulatory*, and *cutaneous apparatus*, and illustrates the relations which the

nervous system maintains with all the organs of the economy. Hence he is again induced to examine particularly the uses of the nerves, and again encounters the opinions of Mr C. Bell respecting the respiratory and other nerves, which he examines with much critical detail and acumen. The whole chapter is exceedingly valuable to the physiologist, and of course is beneficial to the pathologist and practitioner; we must pass it over with slight notice, merely adverting to some few of his opinions.

He states here explicitly, that during concussion of the brain, this organ is in a state of torpor, which torpor or *ab-irritation* extends sympathetically to other organs. At the moment of the accident, there is a spasmodic affection of the stomach and lower bowels, by which their contents are evacuated; but soon these organs, and also all the digestive apparatus, fall in a state of torpor proportioned to that of the brain. These states would seem to demand stimuli; but these are useless in the first instance from the insensibility of the organs, and injurious subsequently by augmenting the reaction of the brain. In all cases reaction in the brain is followed by excitement in the abdominal viscera; each organ of the digestive apparatus is excited, not by its fellow, but simultaneously with every other. This excitement often terminates in inflammation; hence gastritis, hepatitis, &c., so commonly observed after blows on the head. Of the liver particularly he says "that it experiences, immediately after concussion of the brain, a state of stupor analogous to that which renders the intestinal canal immovable. It is then exposed, like the brain, to passive congestions; and when reaction follows, inflammation may be developed in parts surcharged with stagnant liquids, which have already irritated them, with as much facility as it is developed in the gastro-intestinal tissues." This hepatic inflammation does not arise, therefore, from the spreading of inflammation along the mucous tissue of the ducts, from the duodenum, as has been imagined; it has been observed, when no inflammation existed in the lining membrane of the ductus choledochus.

In speaking of the genito-urinary organs, he observes that there is often a spasmodic action or concussion, by which the urine and semen are involuntarily evacuated; but this does not

return; the organs are torpid. He combats the idea that the cerebellum is the only excitant of the genital system, especially during health; desire or will is requisite, which depends on the cerebrum.

Respiration, after the first moments of tumult, is slow, incomplete and irregular, unless death should be threatened, when it becomes greatly accelerated, as if all the remaining energies of the system were concentrated in the respiratory apparatus. M. Gama also observes "that encephalitis never determines a sympathetic irritation in the pulmonary tissue, or in the mucous membrane of the bronchiæ. The brain seems to communicate with this apparatus by means of the nerves, merely to support the respiratory motions. These, always homogeneous, have nothing morbid but their irregularity." P. 282. This irregularity, by interrupting hæmotosis, &c., may give rise to disease, as dyspnœa, suffocation, &c., of which a case is detailed. In this case the author believes that the sudden death resulted from the cessation of motion in the bronchiæ, and that hence the nerves of this tissue are the principal agents of respiration. He believes, however, that this agency is not exclusively confined to the pneumo-gastric nerves, but that "the ganglionic nerves excite the lungs in a manner differing but little from that of the eighth pair; and that they can, in certain cases, even alone, support respiration." Adult dogs, in whom the eighth pair on both sides has been excised, have survived for weeks, and some have completely recovered, the respiration being difficult only for a few hours or days after the operation. In all of them the blood was found stagnant, and as if combined with the parenchyma at the inferior part of the lungs, showing that the par-vagus influences the circulation of the blood. In the opinion of our author, Legallois first demonstrated that this asphyxia from the division of these nerves arose, not from the interruption of their influence on the lungs, but from a paralysis and consequent occlusion of the glottis, and hence by opening the larynx, respiration again became regular. Legallois did not draw from these facts the important inference that the motion of the lungs was in such instances supported by the branches of the great sympathetic.

The author enters into a severe and valuable criticism of

Mr C. Bell's views of dilatation of the thorax, lungs, &c., which ought to be consulted by those who investigate the physiology or pathology of the pulmonary apparatus.

As regards the sympathetic disturbance of the circulatory system, the author maintains, with most modern pathologists, that it is less when the inflammation is confined to the cerebral mass than when it exists on the surface of the brain or its membranes. He endeavours to afford a physiological explanation of this fact, for which we must refer to his work, stating merely that the heart and its vessels are not so directly under the influence of the nerves as other organs, although the connexion between the vascular and nervous systems is nevertheless intimate and essential. Hence the brain cannot cease to act without causing death, but its co-operation with the organic movements may be very feeble without danger; and our existence is less jeopardized from cerebral injuries than if the movements of the heart had been exclusively submitted to the same nervous action. P. 316.

The cutaneous tissue is sometimes excessively sensible, after injuries of the head, which is frequently a very unfavourable symptom; but our author considers it as indicative of spinitis rather than of encephalitis.

CHAPTER VI. *Inflammation of the brain and its dependencies.* This inflammation is termed *encephalitis*; under which term should be included the inflammation of the whole or part of the cerebral mass, and also those of its immediate envelopes, the pia mater and the arachnoid membrane. *Meningitis* should include only the phlogosis of the dura mater.

The traumatic affections of the brain, as well as of other viscera, should be always regarded under two divisions, those which arise from the direct effect of the injury on the organ, and those which result secondarily from the morbid organic movements in the same tissues. These last will of course produce numerous alterations in the appearance, consistence, &c., of the cerebral mass; but nevertheless they are all the result of irritation and inflammation, and therefore should be regarded as the same affection, and not be sub-divided according to the various states in which the affected part may be found. Unfortunately the relation between the symptoms and the direct and indirect lesions of the brain has hitherto been

very imperfectly pointed out, and hence much remains for subsequent inquirers, who should be careful not to render the subject still more obscure by fanciful suppositions or subtle divisions.

Owing to its intimate and vascular connexion with the brain, in all its extent, the pia mater, says M. Gama, is constantly irritated at the same time as the substance of this viscus, whether the irritation originated in the brain or in this tissue. From the pia mater it is slowly transmitted to the arachnoid. Our author now enters into a long, but interesting and important investigation respecting the susceptibilities of the arachnoid and other serous membranes, and the frequency of their diseased actions. He argues from the anatomical structure, the absence of red vessels, and the want of sensibility in their normal state, that they are seldom originally affected, and inflammation in them is excited by the subjacent tissues, and this always gradually. This view, he thinks, is confirmed by a consideration of the exciting causes of cerebral inflammations, whether contusions, changes of temperature, the exciting or depressing passions, and also by an examination of the symptoms of supposed arachnitis, as given by the most approved authors, and of the appearances post mortem. To Lallemand, professor at Montpellier, he gives much praise for his able investigations of injuries of the brain, and points out the decided valuable contributions which he has made to our knowledge on this subject; but he condemns as erroneous his views of arachnitis, and by criticising several cases, so termed, from Lallemand's letters, he endeavours to prove that the symptoms supposed to indicate inflammation of this membrane, are in reality those which necessarily result from inflammation of the brain, and from it alone. Hence he infers that it is impossible to separate in practice these affections, and the attempt to effect this only renders the subject more obscure. We have long believed that there was much that was fanciful in the supposed frequency and importance of arachnitis, and have maintained that inflammation of this membrane, if it really existed in many cases, was accompanied by irritation of the brain, and was hence of but secondary importance. To this we were led by the symptoms during life, and by the appearances post mortem. We think, however,

that M. Gama has gone much too far in denying an original inflammation to the arachnoid and other serous membranes, and in undervaluing the importance and the strength of such disease, however induced. Who has not met with the most intense pleuritis or peritonitis, where there has not been any evidence of inflammation of subjacent tissues? and it is certainly a gratuitous assertion to say that such inflammation existed originally, and had been discussed; we can hardly suppose that inflammation of the pleura would persevere to a fatal result, while the original affection of the contiguous cellular membrane, lung, or intercostal muscles, existing at the same time and in the same system, would be resolved. There can be no doubt that, owing to peculiar anatomical and physiological circumstances, arachnitis is more rarely an independent affection than pleuritis, the irritation readily passing from and to the contiguous tissues, but its occasional original occurrence from contusions, from insolation, cold, &c., and its permanency without involving the brain, can hardly be denied on sufficient foundation. The assertion therefore of M. Ribes, as quoted by M. Gama, seems to us absurd, that the serous membranes are analogous to the cuticle, and incapable of inflammation; it deserves not serious refutation, and but weakens confidence in other opinions which our author has advanced.

There is another circumstance in encephalitis of importance, and we are happy to find it noticed by M. Gama; it is the combination of inflammation, "excessive organic action," with a vital depression of the affected tissues: or, in the language of Hunter, for it is truly his idea, it is increased action with diminished power. This, says our author, is often seen in every part of the body, and is always unfavourable—extensive suppuration or mortification often resulting. In concussions of the brain, this depression occurs; "the brain is plunged into a state of debility and stupor," and when reaction occurs, the symptoms are complicated and less intense, compounded of those of irritation and depression; the diagnosis uncertain and the treatment difficult. P. 367.

"It is to analogous causes we must attribute the softening of the brain (*ramollissement*), sometimes increased to absolute fluidity (*diffuence*), in subjects who have exhibited but obscure symptoms of encephalitis, and who, for this reason,

have appeared to some observers to enclose in their cranium a destructive principle *sui generis*. In these individual cases, the cerebral inflammation excites no reaction; it is marked by a vital depression, similar to that which succeeds concussion." P. 368.

Articles 1 and 2 are occupied in detailing in a concise and perspicuous manner, the *symptoms of acute and chronic inflammation*, and of the *alterations which occur in the external parts during the progress of the inflammation*.

Speaking of these alterations in the scalp, the author refers them to irritation arising from the organic relations established between the parts exterior and interior to the cranium. "The carotids form within and without a capillary network, the affections of which are often identical, because it arises in both situations from the same trunk, and constitutes a common system." This anatomical argument has had, we believe, an improper influence in these cerebral affections. It may be true, when irritation is excessive, that the interior and exterior inflammations may co-exist with equal intensity, but these, experience has abundantly shown, are exceptions to the general rule, that inflammation exists with difficulty at the same time upon the internal and external surfaces of the cavities of the body. After injuries of the scalp and brain, the former soon inflames, suppurates, and even granulates, before any cerebral disturbance is manifest. When encephalitis is established, then the inflammatory symptoms of the scalp, instead of becoming aggravated, diminish; the granulations disappear, the pus becomes sanious, and the wound returns nearly to its original condition; thus contradicting not only the argument of our author, but also that of those physiologists who attribute the circulation of the blood entirely to the heart. M. Gama himself recites cases with which most are familiar, in which phlogosis of the scalp has alternated with that of the brain and its membranes.

The author is not more happy in explaining the frequent occurrence of erysipelas from wounds of the scalp; for he asks, after alluding to the closeness of the tissues of the cranium, if a severe inflammation be here excited, whether the tumefaction which supervenes ought not to gain in surface that space which it cannot acquire in depth? We, who regard erysipelas as a specific inflammation, the peculiarities of which depend on derangement of the chylopoietic viscera, would account for its

frequency after cerebral injuries to the disturbance of the digestive organs, so commonly observed after such accidents, and to which our author has already referred. Vide p. 280 of this analysis.

Article 3. *Terminations of encephalitis.* *Resolution* is the first mentioned, and implies the absorption and return into the general circulation of the materials which the irritation had determined to the part effected. It includes the consolidation and cicatrization of wounds, and is facilitated by counter-irritations, accidentally or artificially excited. Except in cases of wounds, adhesions very rarely occur between the dura mater and the arachnoid. "It would appear to be inconvenient, and that the continual motion of the brain resists their formation."

Serous and purulent exhalations are often found, according to M. Gama, on the surface of the brain, exterior to the arachnoid, or under the arachnoid in the delicate cellular tissue,* between the arachnoid and pia mater, or between the convolutions of the brain; sometimes in the ventricles of the brain. These effusions should be distinguished from abscesses arising from wounds and contusions.

In severe cases, the whole brain is found covered with purulent matters: but these are not produced exclusively, says our author, by the membranes; for the latter are so changed as sometimes hardly to be distinguished, while the substance of the brain is softened, and even infiltrated with pus. The effusions are sometimes so abundant and yet so diffused, as to cover every portion of the brain and spinal marrow; in exemplification of which a case is detailed. Another case is given at page 482, to show that life is occasionally preserved by an abundant discharge of sero-purulent fluid, through the meatus auditorius externus. How such discharge occurs, is, we think, a moot point: our author cuts the knot by asserting that "a part of the humour insinuates itself into the canals of the petrous portion, and there excites a phlogosis of the inter-auricular tissues, resulting in their ulceration and the perforation of the membrana tympani, as happens frequently from severe otitis terminating in suppuration." P. 406.

Degenerations are all the result of irritation, and should in-

* Is the pia mater any thing more than cellular tissue, supporting blood-vessels? Our observations would confirm the negative.

made not only the generation of new bodies, but also the softening and other alterations of tissue. Their effects have been already noticed. A post mortem examination of a subject, dead of chronic encephalitis, exhibited the cerebral envelopes of an unusual whiteness; the brain was diminished in size, and never could have filled the cavity which contained it; its substance was firm, hard, crackling under the knife; and the fibres, on attempting to rupture them, afforded as much resistance as the muscles when force is applied to them. The spinal marrow was equally indurated, and all the nerves seemed to be preternaturally solid. P. 416.

CHAPTER VII. *Treatment of traumatic injuries of the brain, and of their complications.*

Article 1 regards the *local treatment of wounds of the head.*

Article 2 embraces the *treatment of concussion.* The usual practice of the present day is decidedly recommended, of resorting to external stimulants to the skin and nose, and of avoiding depletion before reaction ensues. Sometimes sudden vesications by boiling water or by the aqua ammoniæ may be requisite. When reaction occurs, depletions are recommended, but here two rocks are equally to be avoided, that of taking from the brain too great a quantity of its natural stimulus, and that of leaving this organ too much congested. We must endeavour to balance the reciprocal influence of the heart on the brain, and of the brain on the heart; and also remember that the symptoms of cerebral inertia or torpor are often complicated with those of irritation.

Article 3. *Treatment of encephalitis.* This embraces debilitants and revulsives. M. Gama insists on general bleeding, especially in idiopathic inflammations of the brain; in those from wounds, it is less frequently necessary: but the most useful part of the treatment consists in local evacuations by leeches. He dwells on this point, and insists that as the disease is originally local, such remedies must be the most important. Experience must decide, independently of such reasoning, and we believe that testimony is at present, and will be, in favour of general bleeding, from which will be obtained, very generally, the good advantages of local depletion, and for which this last cannot be safely substituted. He thinks cups are too irritating, and that in some cases of wounds of the cranium, with encephalitis, the sinuses of the brain may be opened.

Theoretical notions of the *modus operandi* of *cold*, rather than careful observation, induce our author to restrict the employment of this most powerful sedative to moderate inflammations, or to the commencement or decline of the disease. He is afraid of the symptoms being *masked* by its influence, while disorganization continues; that leeches on the torpid skin can remove but little blood, and thus the most powerful means of cure be inefficacious. He is afraid also of the reaction from the use of cold; and hence recommends that its use should be gradually discontinued; but even then, he dreads the return and aggravation of the symptoms, and in conclusion affirms, "that cold is never indispensable; it is but rarely useful, and serves, thus to speak, only to stifle the symptoms of encephalitis, or to lose precious time in which the disease might be combated in a manner more direct and certain." To us it seems strange that such fears have not been completely dispelled by experience, but we suspect that dread of such imaginary evils has deprived our author of the advantage of experience. No precious time is lost by the use of cold in cerebral inflammations; if the symptoms be diminished or destroyed, so is the inflammation; disorganization does not continue after the symptoms have disappeared, and the impression of cold, affecting the internal tissues as well as the external, is important and almost indispensable in the most acute forms of inflammations, as well as in those which are more moderate. Neither is there danger from the reactions after the use of cold, and although no one would abandon sanguine evacuations because cold is employed, yet by this powerful adjuvant, the loss of blood will be greatly diminished.

Revulsives are much employed, and according to the representations of our author, are often injurious. *Purgatives*, so frequently recommended and relied on, are never to be given until the symptoms of general and local irritation are greatly lessened. M. Gama says they are useless in all cases of torpor of the bowels from cerebral disease; the brain must first resume its functions, then the bowels will act spontaneously; and often they are injurious, giving rise to putrid, malignant, and other fevers, complicating the original affection. "It is thus," says he, "that false theories not only conduce to an erroneous practice, but prevent the discovery of the evils which

they produce." With all deference to M. Gama, and to the school of which he is a member, we think that few *practitioners* exist, who will not apply this observation to himself and his coadjutors, and denying the supposed deleterious influences of cathartics, continue their use even in acute encephalitis. M. Gama thinks them useful in chronic affections, resulting from acute disease of the brain, and in paralysis and other affections from continued cerebral disease, he would also employ certain internal stimuli in moderate doses, so as not to irritate the mucous surfaces: such as the strychnine, so favourably recommended by M. Fouquier.

Stimuli to the skin can be useful only when the brain can be rendered, by direct antiphlogistics, sensible to their influence. They should always be regarded under the double relation of the pain which they excite, and of the afflux of fluids which they produce to the irritated part. Pain is always injurious in cerebral irritations; hence those revulsives are to be preferred which excite only moderate pain, and act on broad surfaces, so as to gain, by the extent of the parts stimulated, that which is lost in the power of the stimulus. Poultices, cataplasms, fomentations, or frictions with water and vinegar warmed, are often to be preferred to sinapisms, blisters, issues, and setons, not only as less dangerous, but as positively more beneficial.

Articles 4, 5 and 6, are occupied with *the treatment of sympathetic irritations*, with the *dietetic regimen proper during encephalitis*, and with the *attentions requisite during convalescence*. We notice nothing peculiar, except as respects the diet of patients with inflammation of the brain; our author's remarks on this subject deserve attention. "The diet ought to be severe as long as the symptoms maintain their violence, but when resolution is taking place, too absolute an abstinence from food will be injurious, and experienced practitioners will be careful of not carrying it to extremes. They know that the stomach, too long deprived of its natural stimuli, when the want of them is felt, becomes irritated, and that its suffering can, in cases of encephalitis, be felt by the brain and renew its disease. Would it not in reality expose patients, who have just been cured, or who have been threatened with a cerebral irritation, and whose digestive organs are sound, to the accidents produced by the deprivation of aliments, if they were

restrained to a diet too severe? As much as the dangers of a premature nutrition should be dreaded, so much are those from the opposite excess to be avoided. The degree of nourishment may be augmented gradually, as the first attempts indicate its good effects. It is moreover to be remarked, that aliments then act in the same manner as revulsives; that they produce a gastro-intestinal irritation, favorable to the disappearance of cerebral accidents, and that it is not unfrequent to observe the torpor of the intestines dissipated under their influence, after having resisted medicinal agents. The cerebral inflammations, when uncomplicated with gastro-enteritis, do not seem capable of being managed, like those of the digestive apparatus, by a prolonged and very severe diet. Wine and all stimulating fluids are positively interdicted, because they excite too readily the sanguine system and the nervous apparatus." P. 449.

ART. IX.—M'CULLOCH ON REMITTENT AND INTERMITTENT DISEASES.

An Essay on the Remittent and Intermittent Diseases, including, generically, Marsh Fever and Neuralgia: comprising, under the former, various anomalies, obscurities, and consequences; and, under a new systematic view of the latter, treating of Tic Douloureux, Sciatica, Headach, Ophthalmia, Toothach, Palsy and many other modes and consequences of this generic disease. By JOHN M'CULLOCH, M.D., F.R.S., &c. &c., Physician in ordinary to his Royal Highness Prince Leopold of Saxe Cobourg. Philadelphia. Carey & Lea, 1830. (Reprint from the London edition.)

- If ever we wished for a secretary, it was while transcribing this awful title page of Dr M'Culloch's essay. What with his "including," and "comprising," and "coming under," and "treating of," and "modes and consequences," we feared we should never get through his "anomalies" and "obscurities."

One thing, however, the reader soon discovers; the title page is characteristic of the work. We have seldom seen such meshes and tissues of words, involving such a paucity of ideas; so large a net to hold so few fishes. We had thought that Jeremy Bentham was the only writer of the present day who had the privilege of being at times incomprehensible, and generally obscure, in his codifying and proposed reforms of law. But it seems that we must make another exception in favour of the author of the work before us. And why should he not be entitled to the distinction? Medicine may lay claim to immunities as well as law, for her favourite legislator. There is, however, this little difference between the two cases of obscurantism; that, while Bentham is really a powerful and original thinker and a bold innovator—a true reformer, M'Culloch is merely a somewhat voluminous and unquestionably tedious writer, whose parenthetical explanations separate premises from inferences with as fatal certainty as the dread Styx was interposed between Orpheus and his Euridyce. We should think it unnecessary to introduce the Doctor to our readers were it not for his continued assumption of novelty of view, his affectation of Baconian philosophy, and his scepticism of the records of medical science, contradicted as they are by his poverty of facts, his limited experience, and strained deductions. He forgets that an ambitious flight without the eagle eye will only serve while enlarging the horizon to render all objects beneath indistinct, and that what is gained in extent is lost in accuracy.

The leading and to him cardinal idea, which he takes so much pains to inculcate as original with himself, is not, we think, one which Dr M'Culloch can really lay claim to on this score. When he asserts himself to be the first, and even now almost the only physician to regard *tic douloureux* and various forms of rheumatic and paralytic disease as connected with intermittent fever, in their nature and causes, he surely overlooks the literature of his profession, or has singularly limited knowledge of the opinions of his contemporaries. Was it left for Dr M'Culloch to tell us that hemicrania, that toothach, that racking pains of the face, that ophthalmia, that sundry aches of the limbs, assumed at times a distinctly periodical type, and are not only produced by the commonly admitted causes of

marsh fever, but actually alternate with the more common and regular paroxysms of this latter. If such be novelties of his exclusive promulgation, we have been labouring under singular delusion since we began some twenty years ago our medical studies; for nearly ever since that time we have considered these propositions as familiar truths to the profession. How, otherwise than on the long duration and general admission of this creed, can we explain the free use of bark and arsenic, and what were conceived to be kindred medicines in these anomalous products of marsh air.

If success attend Dr M'Culloch's claim in this case, and the medical public are so voracious as to swallow implicitly all his *olla podrida*, the temptation for many of us to imitate him will be irresistible. We shall next hear it gravely set forth, as novel doctrine, pregnant with grand practical results, that inflammation of the brain, and occasionally mania and idiocy, with certain sympathetic disturbances of the stomach and liver, are directly deducible from sun stroke, and that even on occasions hemiplegia and pains in the limbs may at times acknowledge a similar origin. What a prolific age of medical discovery shall we then live in, when every familiar proposition in medicine comes to be accredited as a recent discovery. There is but one thing required to realize this brilliant prospect: it is a burning of the three hundred thousand volumes on medicine, which, like that of the famed Alexandrian library, should leave us once more free to experiment and theorize, without being accused either of plagiarism in stealing others' knowledge without avowing it, or of ignorance, in assuming as our own what we ought to have known originated with, and belonged of right to others.

Some excuse may be found for Dr M'Culloch's inflicting such a weighty book on his professional brethren in Britain, if their opinion be really such as he describes it, when he says, "in every season and almost in every place in our own country, to this very hour, the autumnal and marsh fever is called a typhus, and considered a contagious disease." Such crude notions as these surely require correction, and yet we greatly doubt whether the creed of the author himself be any great advancement on the road of truth. When speaking of the length of time that is said sometimes to elapse between expo-

sure to malaria and the appearance of periodical fever, and of twenty days having been noticed in some cases as intervening between exposure and attack, he tells us that these cases still leave room for doubt; "*from our knowledge of the fact, noticed elsewhere, that a remittent will become, or perhaps produce, in any given individual, a contagious typhus, under confinement.*" Whether it be the remittent, or the individual, or contagious typhus to which the doctor refers, "under confinement," we cannot take upon ourselves positively to say: but the idea which he would convey by any of these suppositions is not one which will obtain currency among us. These passages occur in his first chapter, or that "on the ordinary remittent or marsh fever," and they may be regarded as among the chief novelties in this chapter. The author talks familiarly about "the production of paralytic affections by remittents." What writer of practical knowledge among us would advance such a proposition? Dr M'C.'s affirmation that marsh fever does act directly itself, or its generating poison on the nervous system, is not of remarkably recent origin; nor do we feel more convinced by his *proof* in "the state of apoplexy or profound coma with which the attack is sometimes ushered in." His is a shrewd conjecture, that the larger paralytic affections, such as hemiplegia, or palsy of the leg or an arm, consequences arising from intermittent as well as remittent, are probably direct actions on the nervous system. We should like to know what system, if not the nervous, is directly affected in such cases. It has never fallen to our lot to see such terminations as of palsy after periodical fevers, and we really think that our opportunities of observation have been, at the least, equal to those of Dr M'Culloch. We have witnessed in some fatal cases, marked by inflammation of the brain, phenomena of this kind preceding death: but they were not the mere product of the poison of malaria. Notwithstanding his magnified views of this latter power of causing palsy, he is constrained to admit that cold will give rise to the same effect; and he adds, "it seems to me that the hemiplegia of labouring people, often attributed to drinking spirituous liquors, is, sometimes at least, and probably very generally, the consequence of sleeping on damp ground, particularly after fatigue."

In the second chapter, "on the chronic or relapsing and

obscure or anomalous remittent," the author begins by offering some strictures on the divisions, made by Cullen, of typhus mitior, and synocha, and synochus. The first of these he regards as a modification of remittent, and probably as a fever of malaria; and as far as his own observations go, he should say that it never was a contagious disease, nor produced by contagion. Now if our readers will put this opinion in juxtaposition with the one advanced but a short time before by Dr M'C. "that a remittent will become, or perhaps produce, in any given individual, a contagious typhus, under confinement," they will have a tolerably fair specimen of the contradictions and obscurities in which he involves himself in so many parts of his work. We shall not attempt an analysis of it: the trouble would be poorly repaid by any good; nor can we, in charity, continue to criticise longer than to show the slight claims which such a work has on the confidence of American physicians, whatever may be its adventitious success on the other side of the Atlantic. It is high time for us to set up in these matters for ourselves, and not to take all the transcendentalism of Scotch and German metaphysical medicine for maxims by which we shall abide and be guided. We can produce much better things in this line at home, and it becomes those whose voices are heard as authority, to let this fact be known, so that enterprising publishers may not be misled by foreign puffs to circulate among us what we do not want, and what is a real obstruction to us in the search after truth.

The following pleasant bull and truism open one of the author's paragraphs. "The *obscure* symptoms which I am now to point, are those, as might be anticipated, which whenever they become *marked* are also *easily discovered*." His remarks on muscular weakness as the most prominent complaint of some febrile patients, and on the anomalies of pulse, are common place, though shrouded in a tortuous phraseology. There is some originality in his idea that since the *primæ viæ* are affected in other disorders besides fever, they are therefore seldom of any value as diagnostic symptoms; but are rather consequences than causes. We know nothing of his personal history or of his opportunities for medical practice, and yet we do confess our suspicions that Dr M'Culloch utters mainly results of closet hypotheses, and by no means the inferences from enlarged and

diversified experience. We are strengthened in our suspicions when we find him alleging "that in the far greater number of cases occurring in our own country [Britain] the practice of blood-letting is most commonly nugatory or superfluous, or else injurious." Can we, in the remittent fever of the United States, consent to receive such a dogma as guide, in despite of the plainest experience, which leads to an opinion of a diametrically opposite cast from that just given. The author assumes, as a fact, that remittent fever is the product of malaria, and as such is not characterized by inflammatory action, and consequently, that it does not require the use of the lancet. So baseless is the fabric of this therapeutical superstructure! He thinks favourably of calomel in the chronic and relapsing variety of this fever, because biliary derangement is, he believes, the cause of the febrile return, and that calomel being the remedy for these, will cure or cut short the relapse. Is he sure, or will he now-a-days get physicians who have heard or actually witnessed the different phases of the calomel practice to agree as to its anti-bilious properties, and the necessity of continuing this medicine as recommended by the author so long as it produces the evacuation of morbid bile. The most juvenile practitioner in this country is now well aware that he can cause morbid bilious discharges whenever he chooses, merely by giving calomel. Emetics are the remedy first noticed by the author, and then purgatives. He is not partial to the first, and recommends of the latter those, such as the resinous, which shall produce a local effect. The use of wine and bleeding he treats of separately. It is thus that he examines the value of therapeutical agents in an abstract sense, without passing them in review, as they would naturally present themselves to the mind of the practitioner at the bed side of his patient. Of mercury as a remedy acting on the system at large, he is not disposed to think favourably in the fever under consideration. We transcribe the following paragraph, which we fear is yet but too applicable to a large number of the American physicians.

"To enumerate the evils now daily produced by this medicine in all its forms, in innumerable disorders and patients, by what a French writer, censuring English practice, calls '*l'inévitable calomelas*,' and not only in real disorders, but in im-

v ones, and in subjects that may be considered healthy,

would be a task worth undertaking; while it is one on which I must not venture in this place. It is, or has been recently a fashion, almost amounting to an insanity, and which has not merely abused this active and hazardous substance in medical hands, but which has rendered it familiar to those, a now numerous class in this age of universal aspiring and of assumption, especially on the subject of medicine, who take upon themselves to treat their own diseases, real or imaginary, and still less pardonably the ailments of their acquaintances. If, besides the unconscious dead there are thousands living to rue the day when mercury became the universal medicine in the hands of English physicians, there are tens of thousands who, if they were conscious of the fact, should lament the hour when first they imagined themselves qualified to practice that which he who has studied it most and longest finds the most difficult of arts, and the more he studies it the more difficult, and who should repent too that they ever knew even the very names of 'calomel and blue pill.' Well may entire Europe wonder at English practice; and more still may it express its surprise that universal self-empiricism, before which all the professed quackery of all Europe shrinks into nothing, and in comparison of which the temporizing *ptisanerie* of France is absolute philosophy."

When, in the subsequent paragraphs, Dr M'Culloch cautions against the free or hasty use of mercury in disorders of the "visceral glands," which are connected with relapses and chronic states of the remittent fever; and when he tells us that he has unquestionable evidence of the aggravation and protraction of these fevers from the use of mercury, we are disposed to join with him in the propriety of the caution. But he goes on to say that he has been inclined to doubt whether it should even be hazarded when there is a demonstration of visceral disease; adding the following strange assumption as an admitted fact: "and if, as is supposed by the most judicious physicians, the fever is itself the cause of the glandular affection, it is plain that the imaginary remedy becomes in these cases poison." Now it seems to us that the tendency of the belief among the most judicious physicians is the very reverse of what the author gives them credit for. It is thus that he indulges in a strain of vague generalities, couched in an obscure style, and then forsooth we must gratefully receive the whole lumber as an important addition to our existing knowledge and materials for new theories. Some attention to general and morbid anatomy, and to their connexion with physiological

ulloch on Remittent and Intermittent Diseases.

and pathological phenomena, would have been better preparation for his task than the doubtful logic of Dr M'Culloch, by which, so far from enlightening, he actually obscures the subject. A *questio vexata*, after being argued by him, is not a whit fitter for judicial decision than before: it only becomes a little more involved, so as to force us to throw it into medical chancery, to become matter for definite judgment in the next half century. With all this blundering in pathology we see marked contradictions in his therapeutics. Here we find him reprobating mercury in visceral obstructions associated with remittent fever. A few pages back he praises calomel as the best remedy for a derangement of the biliary functions, so often met with in chronic relapses.—Briefly expressed, he tells us that mercury is generally pernicious in disorders of the visceral glands or remittent fever, but that it is useful in disorder of the liver in this same fever. This is one of the evils in which a diffuse writer so often involves himself.

The fifth chapter is on dysentery and the cholera. The opening sentence is fresh evidence of the exceedingly partial views which the author takes of the etiology of diseases, and of his proneness to assume as a fixed maxim what is still a disputed question. "Since dysentery," he tells us, "is one of the most important and severe of the disorders produced by malaria, I could not," &c. We deny this disease being, as a matter of course, the product of malaria. Jackson speaks of it as most prevalent in the interior of the West India islands, "*at an elevation of five or six hundred feet above the level of the sea, amongst a series of mountainous ridges not directly exposed to currents of exhalations from swamp and low grounds.*" In our own country dysentery has prevailed with more fatality and in wider range in the upper limestone regions, than in the low alluvial soils where intermittents and remittents are so common.

Intermittent fevers, obvious and obscure, take up a hundred and fifteen pages of the work before us. We cannot find in them adequate reasons for the author detaining us so long on this subject. If the common places, the obscure, and the conjectural were to be omitted, his three chapters on this form of fever would be singularly abridged and greatly improved.

Some details are entered into respecting the state of the patient's mind, as marked by irritability or feeling of despair, and occasional desire to commit suicide or murder, even when the common febrile symptoms of intermittent are indistinctly marked. "It is well known that the desire for suicide is often exceedingly temporary, even when it is most overpowering; and I remarked formerly, when treating of remittent, that if controlled with resolution, for even a short time, it will pass away."

But it is in the chapter on the anomalous, obscure and simulating intermittents, that the author riots at large in the mists of erroneous generalization. He triumphs at discoveries which he certainly ought never to pretend to have made, had he studied with a singleness of purpose the writings of his predecessors. Do not the *febres larvatz* of Frank, the neurosthenic diseases of Giannini, and the *fieures intermittentes perniciosas* of the French, present us proofs of the knowledge possessed by various authors of the anomalous intermittents, long before Dr M'Culloch undertook to teach us the institutes of fever. He refers to the apoplectic or comatose state, which sometimes ushers in an attack of intermittent; and is at great pains to tell us of "the danger of error as to such an attack," since recourse to blood-letting, "commonly resorted to by practitioners under such symptoms, be the cause what it may, is often to induce palsy, sometimes death, and in any case, to produce additional bad symptoms, often of a very serious nature." Our own complaint would be, that blood-letting is *not* commonly enough resorted to in such apoplectic cases by practitioners. We have ourselves had recourse to this means of relief by leeches in large number in one fit, and cups in the second, over the epigastrium, in both cases, and with marked benefit. Nor was the coma here at the beginning of a disease, but at the close of a violent and protracted attack of remittent fever, in which depletion had been freely practised. The quinia was afterwards administered, and the convalescence was rapid.

Dr M'Culloch talks of receiving from Italy English patients rendered paralytic under Italian practice. Such wholesale censure as this ought to be substantiated by the most positive evidence; and yet, though himself professing to be in possession of the whole history "most precise and clear," he does not

M'Culloch on Remittent and Intermittent Diseases.

condescend to furnish his readers with their undeniable data. Was there nothing in the constitution and habits, and prior diseases, and obstinacy and duration of the fever of his English patients, at the time, that should explain their paralytic state? Nothing, absolutely nothing but the Italian practice? We have had, for two months past, a person under our charge who had been seized with what the author would call a malari-ous palsy of one side of the face. We had this person, Dr M'C.'s strong warnings to the contrary notwithstanding, bled and cupped at the early period of the disease, and with marked benefit. He is now nearly well; the deformity is gone, and voluntary movement of the muscles is almost entire. The fact is, that in all the neuralgic maladies of M'Culloch, or the same ones called neurosthenic by Giannini, bleeding is neither to be expressly prohibited, as it has been done by both those authors, nor as a matter of course resorted to without regard to the accompanying symptoms and the state preludeing the attack. In the case to which we have just referred, we had recourse to the carbonate of iron and strychnia with advantage, and also a small permanent vessication just before the ear, on the cheek.

We need not follow the author in his enumeration of all his anomalies, since, however new to him, we really do not think them mysteries to the profession at large, whether they be maniacal ravings, abnormal palpitation and pain of the heart, rheumatic pains in other muscles, catarrh, obstructed menses, obstinate headaches, dyspeptic symptoms, &c.

When speaking of the remedies in intermittent fever, Dr M'Culloch's language respecting arsenic is any thing but safe for the young practitioner. He who is so pointed in his reprobation of the free use of mercury seems to entertain no fears from the liberal administration of a much more virulent agent. After enumerating the symptoms following the ingestion, in excess, of arsenic, but short of its properly poisonous effects, he adds that he has never seen ill consequences resulting, and very composedly tells us that "they are all easily removed by brandy, as is the common surfeit, or by opium, and if not, they cease of themselves in a few hours." An ingenious comparison that, *as is the common surfeit!* He gives us no warning against its prolonged use and often consequent de-

struction of digestion: He reprobates venesection in chronic intermittents,—the very form of this fever which we have, in a large, very large number of cases, most successfully treated by blood-letting. Intermittents of months and years duration, or which had been but partially suspended during that time, have been in our hands completely and permanently removed, with the effect of giving health and strength to the patient by the use first of the remedy which is thus pointedly forbidden by the author. Were the subject one of less vital importance, we should feel at times inclined to suppose he amused himself with mystifying his readers, as in the paragraph in which he speaks of wine or spirituous liquors, “used in the chronic diseases so as to produce intoxication.” After showing on what principle this plan sometimes succeeds, and how it injures when it fails, as he admits to be most generally the case, he draws this singular conclusion: “Thus we can easily judge of the degree to which wine may be allowed as an article of diet, and of the restrictions to which a patient labouring under chronic intermittent ought to be subjected.” If any reader can form this kind of judgment from the doctor’s premises, we shall consider him as gifted with second sight, and able to see through a mill-stone. In the way of sage apothegm, it is only equalled by the opinion of Dr Wilson Phillip, in a late work, that wine is innocent, and allowable when it agrees with an invalid. We have not room to follow the author in his dietetic remarks on wine, and to reply to his strictures, on what he conceives the undue restraints attempted to be imposed on its votaries. With him, one grand morbid agency, malaria, is enough, and requires not the additional explanations which would be furnished by intemperance, &c. He speaks of the ascetic principle, which is instilled into us through our whole education. Our own opinion is, that though in early life we are often forbidden this or that article of luxurious diet, or means of sensual enjoyment, it is too often from whim or from selfishness on the part of the excluders, and as a punishment, but not from an ascetic principle. The prohibition only extends to particular junctures, but is not, as it ought to be, regulated by a fixed principle, which some with the author may call ascetic, but which we humbly conceive to merit more the designation of moral or religious.

There are some good remarks on fashionable and domestic quackery in the chapter on the cure of intermittents, which we regret not having room to extract. The author animadverts with some point on the universal tampering with salts and calomel, and a course of the waters at Cheltenham or Lemington, as a mode of passing time equivalent to any other expensive system of idleness on which society has stamped a certain reputation. Alluding to the habitual use of purgatives, he says, "let any family, or any individual thus educated on purgatives, (provided indeed that the health is not utterly ruined,) take but courage enough to destroy the medicine-chest and lock the door against the physician, and they will soon find which was the cause and which the consequence." But when the author tells us, that it is in the hot stage of an intermittent that purgatives are best administered, we feel disposed to believe that he speaks from hypothesis, not observation. General experience, sustained by very good theory, is adverse to such a recommendation. Purgatives, at this time, will distress an already irritable stomach, and besides being rejected, will often augment the fever and cerebral disorder.

As we have already remarked that we cannot see the authenticity of the claims to novelty and sound doctrines set up by the author, in his tedious disquisitions on neuralgia in general, we shall not attempt either to give an analysis of his opinions, nor, *seriatim*, criticise his unfounded pretensions. Perhaps, hereafter, when reviewing the work of Teale on Neuralgia, we may be induced to notice the concluding chapters of Dr M'Culloch's work. In the mean time, it is sufficient to say, that these chapters on *tic douloureux*, *periodical head-ach*, *various neuralgia in other parts of the body*, *sciatica*, *questionable neuralgia*, *neuralgia from injury of nerves*, *toothach*, *neuralgic ophthalmia*, exhibit a constant assumption of originality of view, illy borne out by the context; and what might be regarded as original, is so from the obscurity of dialectics and involved phraseology, rather than from any really marked novelty of idea. If Dr M'Culloch cannot find that physicians have regarded periodical headach and vertigo as a variety of intermittent fever, his researches have been certainly much more circumscribed than those of very many, we may say the majority, of the reading and observing part of the profession.

So, when he intimates that for toothach extraction of the offending tooth is universally recommended, even when it is not decayed, he must have very limited notions of the knowledge of his medical brethren, and very limited intercourse with them in the practice of their profession. Substitute rheumatic for neuralgic, and we believe in this case the one term as luminous as the other; and what physician, or even old woman, is not aware that in such kinds of toothach, extraction of the tooth will not prevent the one next to it from becoming the seat of pain, and so on along the entire course of the jaw. In neuralgic or rheumatic ophthalmia, even admitting, what we strongly doubt, the universally miasmatic origin of the disease, the practice recommended by the author is not a legitimate deduction from the premises, nor can we join him in reprobating evacuations, sanguineous and others. This carries us to his chapter on the cure of neuralgia. Dr M'Culloch reprobates the lavish and empirical use of the narcotics in the various affections included under the general term neuralgic. He regards tonics as the chief and most energetic remedies, and of these the most efficacious are bark and arsenic. Need he be told, that if any strong example of extensive empiricism were to be adduced, it would be the free use of these two medicines in all the varieties of intermittent disease, call it fever, or neuralgia, or neurosthenia. And then what a heedless, we may say mischievous spirit of generalization is that which he displays in taking bark as the type of all the astringents, aromatics and bitters; and arsenic as the type of the metallic remedies, usually had recourse to in paludal fevers and periodical disease. Happy for us, we are not under the necessity, at the present day, of taking refuge behind such conjectural philosophy as this. It was hardly worth while for Dr M'Culloch to take the trouble of writing a work of nearly five hundred closely printed pages, in order to tell the world, that remittent and intermittent fevers, dysentery, cholera, have common paludal or malarious origin; that an attack of one of these diseases is sometimes supported by local or neuralgic pain, which is also periodical in its recurrence; that all the neuralgiæ are of malarious origin, though he himself admits that some of the worst forms may be produced by cold; and finally, that the best remedies for these various diseases are bark and arsenic. If

he has assailed empiricism of one kind, and should succeed in overthrowing it, he merely substitutes another variety more extensive in its place, and one which we do not hesitate to say, will be more mischievous, than that against which he levelled his attacks.

His commentaries on the above simple text, new to him, but as we conceive, familiar enough to his readers, are very obscure as pieces of composition, and utterly disappoint the inquirer after new and practical truths. The whole of them might, with great advantage, be brought within the compass of a hundred pages, whether we regard the reputation of the author, or the good of the medical public who should feel inclined to become his readers. As it is, we cannot but regard the essay of Dr M'Culloch, with such a long title, as a work of vast pretensions and small merit, magnificent promise and feeble execution. An extract from his preface will serve to convey our ideas to the reader, if the latter will just substitute the words "the essay of Dr M'Culloch" for the word "physic." "The language of truth is simple and brief, but that is not the language of physic. Its words have meanings, and the same words have always the same meaning; but this is not the language of physic. The language of error is multitudinous, variable, vague and unsteady; and this is the language of physic. If there be a philosophical reader who doubts this, if there be a logician, a man accustomed to evidence, who has not read medical books, let him read even the most celebrated, and be satisfied." We would add, let him read the essay of Dr M'Culloch and his scepticism on this point cannot fail to be removed. Not even the ingenious idea of this author, to attempt the solution of a medical problem by algebraical formulæ, can save him from this judgment. The labours of the iatro-mathematical physiologists, such as Keil, Borelli and others, are good recorded evidence of the futility of attempts to represent, by fixed and absolute quantities, that which is hourly changing. Details of facts, phenomena which are facts, and inferences from them, are required in medical philosophy; but our process of reducing them to their true value is not by means of algebra and the mathematics. We fear that Dr M'Culloch has taken more pains to prepare himself in these latter branches of human knowledge than in pathology

and therapeutics, for the composition of his essay. As unprejudiced judges, we must, however, declare that we have read with much satisfaction many passages scattered through the work, in which he exposes, by argument and ridicule, the excessive proneness to the poly-pharmacy or ultra-drugging of his countrymen, and countrywomen also, for the mania is not confined to the members of the medical profession alone. We cannot but regard these passages as the best part of Dr M'Culloch's essay, which, in connexion with our opinions already expressed, is equivalent to saying, that he has utterly failed in his main design, and has only been fortunate in the incidental, or as it were, parenthetical points.

ART. X.—ANATOMY AND PHYSIOLOGY OF THE GANGLIONIC NERVOUS SYSTEM.

Recherches Experimentales sur les fonctions du Systeme nerveux ganglionaire, et sur leurs applications à la Pathologie. Par J. L. BRACHET, D.M. *Medecin de l'Hotel Dieu de Lyon, &c.* Paris, 1830. Pp. 447.

De Nervi Sympathetici Humani Fabrica, Usu et Morbis Commentatio Anatomico-Physiologico-Pathologica. Tabulis æneis et lithographicis illustrata. Auctore JOH. FRID. LOBSTEIN, Medicinæ Clinicæ et Anatomix Nosocomi Civium Medico Obstetrico Primario; Plurium Societ. Medicorum Sodali. Parigium, 1823, 4to, pp. 174.

The physiology and pathology of the nervous system are subjects of avowed difficulty, and upon the investigation of which every writer blessed with a reasonable portion of modesty enters with hesitation and fear. All who have paid a due degree of attention to physiological inquiries, and kept pace with the progress of that science, must be fully aware, that while our knowledge relative to the mechanism of many of the functions of the animal economy has, in consequence of the discoveries made in anatomy, as well as of the improved state

of chemistry and natural philosophy—the results of vivisections and a more careful analysis of pathological phenomena, advanced, within less than a century, to a gratifying, we had almost said an unlooked for degree of maturity; we are indebted to recent investigations, nay, to our very contemporaries, for the few positive facts we possess in reference to the normal and abnormal conditions of the nervous system; very many points connected with this portion of our economy remain, however, to this day, and we lament to say are likely to remain for a long time to come, subjects of dispute among physiological inquirers. Let the reader consult the writings of Bichat, Reil, Rolando, Bell, Magendie, Bellingieri, and a thousand others we could mention, and he will be at once satisfied that there is hardly a single portion of the nervous system on the functions of which the opinions of the best writers in the science are fixed and unanimous—in which the most contradictory theories have not been advanced and stubbornly supported.

Aware of this circumstance, it cannot be regarded as surprising, that an individual uninfluenced by a preconceived and favourite theory, in endeavouring to form for himself, or attempting to present to others, a just idea of the present state of our knowledge on the subject, should feel the difficulty of the task, and approach it with diffidence and an apprehension of failure. Notwithstanding this, however, with all the difficulty of the task staring us full in the face, we propose to devote a few pages on the present occasion to the consideration of the physiology of the ganglionic or sympathetic nerve, which of the various parts of the general tissue collectively designated by the term *nervous*, is the least understood, and hence requires to be investigated with the least possible delay.

To this undertaking we are led by a sense of the duty imposed on us as editors of a periodical work, of laying before our country readers, who, from the circumstances under which they are situated, are generally unable to refer to original sources, a concise account of the present state of opinion on the more important subjects connected with their profession. This of course is not always the most agreeable circumstance incidental to our editorial career. But we shall always gladly submit, if by so doing we can be useful to our patrons.

For thus *sacrificing* ourselves for their benefit or amusement, we hope we shall be entitled to a small share of gratitude on the part of the unlearned; while from the initiated we solicit a large fund of indulgence for the imperfect arrangement of the following pages, the substance of which we derive, not only from the works of Professor Lobstein and Dr Brachet, but from various other sources, as well as from our own personal observations and reflections.

The great sympathetic, so called from its supposed agency in establishing a relationship of action between the different parts of the body, has also been denominated by some, in consequence of its being distributed to the three great cavities of the body, *trispplanchnic*, while from others it has received the name of ganglionic, in consequence of its presenting a great variety of ganglia—a circumstance on which was founded a doctrine we shall presently have occasion to notice—and by others, from its connexion with the intercostal nerves, that of great intercostal.

This system of nerves, which we shall call indiscriminately by the first or third of these names, is composed, as we have just said, of a series of ganglia, connected to each other by means of intermediary filaments, and of a few longer and thicker cords. It extends from the basis of the cranium to the lower part of the trunk, and communicates by means of small filaments with the spinal nerves and with several of those that pass out from the cranium. It sends off, moreover, from its several ganglia, nervous branches, which accompany the arteries, and are distributed in a more particular manner to the organs of the involuntary functions. This nerve has been distinctly traced along the internal and external carotids, the basilic and part of the brachial arteries, as well as to a considerable distance along the femoral artery. Such, indeed, is the extent to which the filaments of this nerve have been traced along these vessels, and other larger trunks, and such is the difficulty experienced in explaining, without their concurrence, some phenomena we shall have occasion to allude to, that the anatomists of the present day have generally thought themselves justified in concluding, that the ganglionic system furnishes filaments which accompany all the arteries in their ultimate distribution to every part of the body; and there are facts

which even lead to the belief, that, from the same source is derived the main supply of nervous power possessed by the capillaries.

At its superior part the sympathetic is concealed in the carotid canal and in the cavernous sinus, and assumes there the appearance of a gangliform plexus, sending off several small branches, two of which join the sixth encephalic pair, while a third communicates with the vidian branch of the fifth pair. By means of the same pair it communicates likewise with the ophthalmic ganglion, which, indeed, was considered by no less an authority than Bichat as belonging to, or in other words, as constituting a portion of the sympathetic. Should this view of the source of the ophthalmic ganglion be admitted as correct, it must follow that this ganglion is the superior of all those belonging to the order of nerves we are now considering. Beclard and other anatomists class the spheno-palatine and the maxillary among the ganglia of the sympathetic. When we trace the sympathetic after its escape from the carotid canal, we find it to pass downwards on each side of the spine, as low as the sacrum. In this course it presents many ganglions, which may be enumerated thus: three in the neck, which from their situation and respective positions are denominated superior, middle, and inferior *cervical*; twelve in the region of the back, and called *thoracic*; five in the lumbar and three or four in the sacral regions, which have received the names of *lumbar* and *sacral* ganglia. The sympathetic nerve of each side terminates at the coccyx, either by means of a small ganglion denominated from its situation *coccigian*, or by uniting with the corresponding branch of the opposite side.

By most writers on the nervous system the ganglionic nerve has been considered as an unit; in other words, as *one* system, charged with certain functions, which, though differing in their results, belong to the same class. Other writers have divided it into two portions: one *central*, situated in the abdomen, over and around the large vessels and in the neighbourhood of the viscera; the other, *peripheral*, composed of ganglia situated in various parts, along the course and on each side of the spine. M. De Blainville also has drawn a line of demarcation between the more deeply situated ganglia, to which he assigns the duty of presiding over the

nutritive functions, and the more superficial, united together by filaments, and contributing to the formation of the great sympathetic cord, the function of which he considers to be that of establishing a communication between all parts of the organism. To the latter he in consequence applies exclusively the name of sympathetic, which has been given usually to the whole system. This view of the subject, founded on the anatomical difference existing between the two portions of the ganglionic system, on the diversity of the two sets of functions, which, as we shall see, are referred to this system, as well as on some circumstances attending its evolution, is highly plausible, and would merit, even had it not the sanction of a name so justly celebrated as that of M. De Blainville, the attention of every physiologist. However, in this article we shall treat of the ganglionic system as a whole, without any reference to the above division of it; the number of facts in our possession not appearing to us sufficiently numerous to justify any decision as to the precise portion of the mass of ganglia which presides over one or other of the sets of phenomena commonly referred to the sympathetic system generally.

The ganglia are bodies irregular in shape, though assuming in general a roundish and oval appearance. They are enveloped in a double coat of cellular membrane, and are supplied for purposes of nutrition with a sufficiency of blood-vessels.

As regards the intimate composition of these nervous enlargements, a difference of opinion exists among physiologists. Mr Brodie, in his lectures delivered before the College of Surgeons of London*, has given in the following language what he considers to be the sum of our knowledge respecting their structure.

“They appear,” he remarks, “to be formed by an enlargement of the nervous substance, and are of a complicated structure. Into ganglia the nervous fibres may be traced, and from these ganglia the nervous fibres again emerge. Scarpa has paid much attention to the fabric of the ganglia, and he gives the following history of it. He says that the fasciculi of nervous filaments which enter a ganglion are sepa-

* These Lectures are yet unpublished. We derive the above extract from Dr Wilson Philip's paper on the functions of the nervous system, inserted in the volume of the Philosophical Transactions for 1829; and subsequently in Dr Philip's new work on acute and chronic diseases.

rated and divided from each other, and that they are combined anew. A nervous fasciculus entering a ganglion divides into smaller fasciculi. These divide again, and cross and intersect each other at various angles. Then the divided fasciculi become again united, and as at first, they divide into smaller and smaller fibres, so that when they begin to unite, they form gradually larger and larger bundles. At last the nerve which entered a ganglion emerges from it, with its fibres collected into one or more fasciculi. Sometimes several nerves enter a ganglion, in which case they are all blended together, forming a complicated network, in which it is impossible to determine what belongs to one nerve and what belongs to another. Every fasciculus or filament which enters a ganglion passes through it. There is no appearance of any one terminating in it.

"If," continues Mr Brodie, "we unravel the texture of a ganglion, we find that each nervous fibre retains its own peculiar neurilema; but, besides this, the spaces left between the intersection of the fibres are filled up with a peculiar soft substance of a grayish or yellowish colour."

We have given this extract from Dr Brodie's lecture because it contains a pretty fair summary of the opinion of Scarpa, whose work on the ganglia we have not been able to consult, and not from any intrinsic merit it exhibits.

Bichat, who followed the Pavian professor, after stating that the tissue of the ganglia has nothing in common with that of the brain and neuralimatic canals, which, according to him, should be classed among the fluids, remarks that the former does not appear to be fibrous; all signs of a linear or filamentous organization being completely unrecognisable on simple inspection. He considers this tissue as nearly homogenous in its nature, and affirms that when cut into slices it presents a uniform appearance. Bichat allows, however, that he has not repeated all the experiments of Scarpa, and refers to the work of his Italian predecessor, and to the plates it contains. He nevertheless thinks there is something else in ganglia than a mere resolution of the nerves into very delicate filaments. "A glance," he remarks, "enables us to discover a marked difference between the ganglia and the nerves,—a difference as great as that existing between the cerebral nerves and the brain itself; the colour, consistency, and other outward qualities, as well as properties, of the two being quite dissimilar." "Were the nerves that come from the spinal cord merely unravelled in

their passage through the ganglia, this would be but a difference of form, not of nature, and their properties, therefore, would remain the same. Why has not nature placed ganglia on the nerves of the limbs as on those of internal parts. If there be only a resolution of nerves into finer filaments in the ganglia, why is there no constant proportion between the fibres that enter on one side, and those that issue from the other? Did the nerve that penetrates the superior cervical ganglion from above, expand in its interior, and reunite its filaments from the cord that issues from below, it ought evidently to be precisely of the same size at its exit as at its entrance. Such a relation, indeed, between the nerves of the opposite extremities of ganglia ought to be general. But a very cursory examination shows that a contrary disposition almost invariably obtains. The size of the ganglia should be relative to that of the nerves whose expanded fibres are said to compose them. Why then are the intercostal ganglia so small, and the trunks which unite, or rather to use the common phrase, originate, and then leave them, so large? And why, on the contrary, is the superior cervical ganglion so voluminous, and its nervous branches so minute? How can the frequent interruptions among the ganglia in the human body, which in a host of animals are quite regular, be explained, if the nervous filaments which enter be continuous with those that issue from them?" It is no slight support to the opinion of Bichat, expressed in the above extract from his *General Anatomy*, to remark, that Sæmmering has made very similar reflections on the same subject. As regards the mucilaginous matter pointed out by Scarpa, and before him by Winslow, and which according to them is interposed between the nervous filaments of the ganglia, Bichat remarks, that it ought to predominate considerably, since the ganglia surpass much in volume the nerves which are supposed to give them origin. He adds that he has never seen this substance; that he does not know what it is, and that a ganglion when divided appears quite solid.

Since the time of Bichat, however, the majority of anatomists among his countrymen, as well as in Germany, Italy, and England, have admitted the fibrous nature of these bodies, as well as the existence of the peculiar additional substance we have mentioned.

According to Haase it is sufficient to cut a ganglion in order to see a number of small white points which are nothing more than the divided extremities of the filaments. Professor Lobstein remarks, and in this he is supported by Béclard and other anatomists, that the filaments which penetrate into or emanate from the ganglia, observe a straight direction when the ganglia are formed by a single nerve, while they interlace with each other whenever these bodies are formed by several nerves. He informs us, that in a nerve which had been allowed to macerate a long time, he found that the medullary cord which had emanated from the ganglion situated above it, passed through all the succeeding ganglia, and in doing so united with other cords, constituting the substance of the latter.

Mr De Blainville, who in consequence of his regarding with Gall, Reil and Walther, and against the opinion of the elder Walther and Sæmmering, the gray matter of the medulla spinalis, of the medulla oblongata, and of the peduncles of the cerebellum and brain, and other portions of the central masses in the light of ganglia, draws a distinction between these and the ganglia properly so called. To the former he has given the name of pulpous ganglia, while to the others, which include the ganglionic system of every writer, he applies the term *non pulpous* ganglia. The former he regards as composed principally of neurine, and doubts the existence in it of the fibrous structure on which so much has been said. The others he considers as constituted of nothing but an interlacement of fibres. In a word, he considers them in the light of nervous plexuses, in the same way as the lymphatic ganglia consist of plexuses of lymphatic vessels; and does not even allude to the pulpy matter of which we have spoken. When physiologists and anatomists of the standing of Scarpa and De Blainville differ so materially on this point, the existence or non-existence of a peculiar pulpous matter in the ganglia of the sympathetic, it is difficult for less authoritative writers, unless backed by an extensive series of experiments, to decide between them. Yet as Scarpa's opinion appears to have received the sanction of a large number of the most accurate investigators; and as De Blainville, on the other hand, so far at least as we can learn, stands alone in his opinion on the subject, and has not supported it by the results of chemical analysis or dissection,

we must, with due deference to him, lean on the opposite side of the question;—in a word, we go with the majority.

The question here presents itself, are the ganglia of the sympathetic similar in organization with those of the other nerves, or do they differ from these in a tangible manner? From the quotation we have presented from the lectures of Mr Brodie, it appears evident that this distinguished physiologist and surgeon, and consequently Scarpa, from whom all his information on the subject of the ganglia is derived, have considered these small nervous masses in a general way, and adopted the same views in reference to the structure of them all, whether belonging to one or other of the different orders of nerves. This, indeed, is a common occurrence among writers on this subject, particularly of the English and German schools. Yet these writers, while maintaining that, however different from each other the ganglia may appear in form and situation, their general structure is with unimportant differences the same in all, allow that the simple or spinal ganglia differ in several respects from the compound ganglia, by which name Scarpa designates the ganglia of the sympathetic system: 1. In the situation they respectively occupy; 2. In the kind of envelope with which they are invested; 3. In the mode in which the nervous filaments pass through them and from them. By Wutzer, who in his elaborate work on the subject of ganglia,—*De Corporis Humani Gangliorum Fabrica, &c.* has furnished us with one of the most satisfactory accounts of the anatomy of these nervous bodies, and who considers the gasserian, the ciliary, and the maxillary ganglia as belonging to a different order from the simple and compound, and as *cerebral*; three sets of these bodies have been made; 1, those we have just mentioned, (the cerebral); 2, those belonging to the spinal system, and 3, the vegetative, or those connected with the organs of involuntary motion.

The following account of the differences existing between these various sets of ganglia in respect to envelope and structure, is given in the language of Mr Craigie.* “Void of the dense strong coat with which the others are invested, the

* General and Morbid Anatomy, p. 269.

cerebral ganglions consist of soft secondary matter, connected to the filaments of one, or at most of two branches, and are arranged with less complexity." (Wutzer.)

"The spinal ganglions are said to possess two coverings, one of which resembles the cerebral membrane, (*meninx dura*), the other the soft cerebral membrane, (*meninx tenuis, pia mater*). The non-spinal, or compound ganglions, have also two coverings, which are merely different modifications of filamentous tissue less dense and compact than in the former." "In the simple ganglions, the filaments of which they consist invariably follow the axis of the ganglion; but in the compound ones they are found to rise towards the side and emerge from them; and upon this variety in the direction and course of these filaments depends the variety of figure for which these two orders of ganglions are remarkable. These nervous threads (*stamina s. fila nervea*) described by Scarpa, correspond to the medullary filaments (*fila medullaria*) of Wutzer. According to this anatomist these filaments, when about to enter the ganglion, lay aside their neurilem; yet they are sufficiently tough to resist a certain degree of tension."

Besides these, other differences may be added; the great variability and irregularity in shape of the non-spinal ganglia and their connexion with several nervous trunks or branches. The pulpos substance in them is so strongly united to the medullary fibres, that it is very difficult to separate them from each other—circumstances which do not obtain in the cerebro-spinal ganglia. Independently of this, it may be stated that this pulpos substance appears to differ from that of the other set of ganglia, in being harder, of closer texture, and greater tenuity. This is particularly observable in the cœliac ganglia and in those of their plexus.* M. De Blainville is a supporter, and certainly none abler could be desired, of the idea of a difference between the spinal ganglia, which according to him are pulpos and partake of the nature of the nervous centres and their cords, and the true ganglia which, as we have seen, he considers to be non-pulpos. We need hardly remark that the force of his remarks on the subject will rest solely on the degree of accuracy that may be conceded as to the anatomical difference between the two sets of ganglia.

But whether these points of dissemblance should be consi-

* Beclard's General Anatomy, § 805, 806.

dered as sufficient only to establish the existence of a slight *variety* in the nature of the two sets of ganglia; or whether they would justify us in regarding the compound ganglia as differing completely from the others, and thus lead us to infer a difference of function, is a point on which we will not pretend to hazard a decided opinion at present, and to which we shall have occasion to recur in a subsequent part of this article.

The peculiar substance of the ganglia of which we have so often spoken has been considered by many anatomists as analogous to the cineritious substance of the brain; but Scarpa regarded it as consisting of soft cellular substance filled with a peculiar matter differing in various individuals—being mucilaginous in emaciated subjects and yellowish and oily in those that are fat. It will be sufficient to remark on this subject that the experiments of Bichat, and subsequently of Wutzer, show that the matter of the ganglions is not acted upon by chemical agents, in the same way as is the gray substance of the brain; and that contrary to the opinion of Scarpa,—an opinion subsequently adopted by Meckel,—Bichat, Wutzer and Béclard, they conclude from their experiments and researches, that the ganglions are never converted into fatty matter. Béclard merely admits that in very corpulent subjects, a fatty substance accumulates within the membranous covering of the ganglion, and hence surrounds the latter. But this is very different from the idea of Scarpa and Meckel.

The nerves which by their assemblage compose the sympathetic are of three kinds: 1. Those which establish the communication between the ganglia themselves and serve to convert the whole into a single system or apparatus; 2. Those which unite the ganglia with the thirty pair of spinal nerves; and finally, those which are sent off from the ganglia to the various parts of the body. The first and second set consist of short and white filaments, resembling somewhat those of the spinal nerves. The third set, which is the most important of the three, appears to be composed of filaments of a different order. According to Bichat they are of a reddish colour, soft, delicate and small, and unlike the former, indivisible into filaments or capable of being separated from the neurilima. It is right to state, however, that Scarpa, whose observations have been confirm-

ed by Lobstein, holds a different sentiment on this subject from Bichat, and while admitting a few external differences between them and the other nerves, considers that *all* the branches of the sympathetic are similarly organised and composed of small filaments which interlace with each other in the form of plexuses. The various filaments of the third set of ganglionic nerves differ in external appearance in various parts of the body; some are thin, delicate, and rather flat than cylindrical; others are thick, soft and almost transparent; others long, fine and white, &c. Uniting with the ganglia, and not with the intervening nervous cord, they entwine the arteries, accompany them to their minutest ramifications, and may hence be considered as one of the generating elements of the organs. In many parts these nerves form, before accompanying the arteries, inextricable plexuses, to which particular names have been given, and from which the branches arise that follow the arteries.

It appears, therefore, from the preceding remarks, that the nerves, which by their assemblage constitute the sympathetic system, differ not only among themselves, but from the cerebro-spinal filaments. Besides the differences we have noted, it may be added that the nerves of the sympathetic do not present the same symmetry of arrangement, regularity of distribution, and constancy in the number of their filaments, as are observed in the nerves of animal life. To these differences Bichat adds the following: 1. The organic nerves possess a greater degree of tenuity at the place of origin, in or at their escape from the ganglia—the filaments breaking more easily at any other place than at that point; which is the reverse of what occurs in the nerves of animal life. 2. Sometimes the ganglion is prolonged for a short distance under the form of a cord. This is particularly the case with the superior cervical, the lumbar, the semilunar, &c. 3. The nerve arises abruptly from the ganglion in the same way as a muscle attached to a bone. This is readily seen by dividing the superior cervical ganglion, and the nerve which escapes from it, downwards. 4. The dense cellular envelope of the ganglion is continued on the nerve, which by this means acquires a greater degree of consistency. When this envelope is carefully removed each fibrile is seen to arise separately from the ganglion. In some places each filament remains distinct; in others, they unite

together in form of a cord. M. De Blainville, who, as we have seen, entertains different views respecting the organizations of the ganglia, affirms that the nerves of organic life present *all* the characteristic signs of the non-pulpous ganglia—the same semi-transparency, the same rosy or grayish hue. He indeed states in the most positive terms, (vol. ii. p. 412,) that the difference between the two sets of nerves is considerable, and that the nerves become more and more modified in their aspect, in proportion as they are removed from under the influence of the will. The ganglionic nerves, he continues, are more difficult to separate into filaments than those of animal life; an operation, indeed, which cannot be effected without the aid of maceration. M. De Blainville further remarks, that no *sensible* difference can be detected between the nerves which compose the great sympathetic cord and those which are distributed to the viscera and arteries. Professor Treviranus of Bremen, Dr Philip, &c. have directed attention to other differences between the nerves of the sympathetic system and those of animal life. The former, remarks the first of these writers, are not at what he calls their origin in the spinal marrow, as intimately united together as the other nerves, and particularly those of the sensorial organs. After their emersion from the bony cavity the reverse takes place. No nerve of a sensorial organ unites during its course with any heterogeneous nerve, except in animals of the lowest grade. *All* the nerves of vegetative life, on the contrary, unite together during their course by means of plexuses and ganglia. This union becomes the more intimate and frequent in proportion to the complication in the organization of the animal. The sensitive and motive nerves also unite frequently during their course; but this union takes place most frequently by anastomoses and plexuses; but rarely by means of ganglia. This law has been long established and developed by Scarpa. Treviranus adds that all the nerves which concur in the functions of the great sympathetic unite with it by means of anastomoses, plexuses and ganglia. If to the differences that are thus shown to exist between the various parts composing the ganglionic system of nerves and those that belong to the nervous system of animal life, we can add some resulting from a difference of origin and functions, we shall find little difficulty in joining in opinion with Bichat,

and the other anatomists who regard the two systems as totally distinct from each other. If we cannot show such differences of origin and function, those which we have seen to be admitted in reference to their anatomical character, can only be considered as establishing the existence of a slight variety in the two systems of nerves, and the whole of Bichat's ingenious theory will fall to the ground.

Before entering on these questions, however, it becomes requisite to say a few words in relation to the evolution and development of the ganglionic system in the human subject, and to point out briefly the characters it presents in animals of an inferior order; or more properly, to ascertain to what portion of the nervous system of our species the nerves found in the lower orders correspond.

Bichat and many other anatomists who have directed their attention to the subject of the anatomy of the nervous system, have noticed that the ganglionic system is slower in its development than the nervous system of animal life; but Béclard, in his additions to this author, remarks (vol. i. p. 354,) that the sympathetic arises at the same time as the brain and spinal marrow. It is found at the third month of foetal existence. The coeliac ganglia and the splanchnic nerves are developed a little later than the cervical ganglia and the cardiac nerves. Bichat remarks, that the ganglions do not grow proportionably to the organs they supply with nerves, those supplying the genital organs, which are almost forgotten in the early period of general nutrition, being as large as those which furnish branches to the liver, the stomach and intestines—organs that are characterized by their early growth. These nerves, according to the same authority, observe, in respect to growth, the same laws as the ganglions, although the arteries on which they ramify are more or less developed according to the organs into which they penetrate.

This opinion, however, though generally received at the present day, is far from having been adopted by all anatomists. Already Béclard himself, who, as we have seen, admits that the sympathetic arises at the same time with the brain and spinal marrow, after remarking that at the first month of foetal existence the intercostal spinal nerves of the vertebral animals are observed, (consequently before the brain and nerves), adds, that

the filaments of the sympathetic, owing to their transparency, may possibly escape at this period the notice of anatomists. Other writers have been more positive on the subject. Ackerman concludes, for example, that the sympathetic nerve is necessarily the first part found, because the heart, in which the vital energy prevails in the highest degree, is the centre of organic life. A view of the subject, nearly similar, has been adopted by Mr Parker, some of whose interesting lectures on "Comparative Anatomy as illustrative of General and Human Physiology," delivered in the medical school of Birmingham, have lately appeared in a British contemporary journal. His reasons appear to be chiefly drawn from facts presented by the anatomy of the nervous system in the lower animals. At the earliest period of animation, Sæmmering has considered, says Mr Parker,

"The nerves arising from the ganglionic system to be peculiarly the nerves of the heart and arteries, endowing them with that irritability which presides over all their phenomena, in health and in disease. This observation likewise derives support and illustration from what we perceive in the progress of the development of the chick—a true sanguineous circulation, commencing as early as the twenty-fourth hour of incubation: the heart and large arterial trunks are in action towards the end of the second day, after which period the increase of the arterial and venous systems, lining the chorion, exceed all calculation. That this system of nerves is first formed, first in action, presiding particularly over the functions of the vascular system, must be evident from the mode of life carried on in the fœtus during gestation. 'As soon as the least organization is apparent, the little heart may be seen producing its blood on all sides; the heart is the part first formed, and as all the organic phenomena depend upon it, we may readily conceive in what way the functions of inward life are thrown into exercise.' "

But be this as it may, the system of nerves in question appears at a very early period in front of the spinal column, under the form of small ganglia, communicating with each other, and with the spinal centre, by means of medullary cords. It is from this circumstance that some writers have been led to conclude, that the sympathetic nerve retains much longer, even during the whole course of life, the distinctive character of secondary forms; since the different gangliform masses which constitute it do not agglomerate into one mass, and hence present a series of

distinct organs, more or less approximated to each other, as is observed to obtain in the nervous system of invertebral animals. It is not to be forgotten, at the same time, that this incomplete union may serve as an argument in favour of the opinion that the sympathetic is formed later than the brain, —the parts which constitute it being more widely separated than those which concur in the formation of this organ.

At the period when first distinctly seen, the sympathetic ganglia and nerves are of the same colour as they are subsequently in the adult. They are even at this period proportionably larger than in after life, with the exception, as we have seen, of the semi-lunar. In old age they become paler and dryer than they were at an earlier period, or in the prime of life. The filaments appear less numerous and smaller, so that this atrophy seems to coincide with that sluggishness and diminished energy of the organic functions generally observed in individuals far advanced in life.

While on this subject it will be proper to notice a circumstance in connexion with the development of the sympathetic system, on which a good deal has lately been said by comparative anatomists. We have already stated the views of Ackerman, Scëmmering and others, relative to the connexion of the sympathetic system with the heart and arteries. Mr Serres has extended the application of this anatomical and physiological fact to the development of this system of nerves. It results from his researches, that in the four classes of vertebral, and in the invertebral animals, the evolution of the sympathetic is in proportion to that of the sanguiferous system, and that, on the other hand, the sympathetic decreases in the same ratio as the latter. Thus, as we descend from the mammalia and birds to the reptiles and fishes, we find that the sanguiferous system becomes more and more atrophied. The same, as we are informed, occurs in relation to the sympathetic.

With a view of elucidating the intricate subject of the physiology of the ganglionic system, comparative anatomists have referred to the organization of the nervous system in the various classes of the lower animals, and noted the correspondence existing between the organs developed in each class, and the number, size, &c. of the ganglia, as well as of the filaments with which their organs are furnished. But the discrepancy

of opinion on the subject of the proofs furnished by comparative anatomy is no less evident than on that of the structure of the sympathetic, arising from the difficulty of ascertaining what should or what should not be regarded as that nerve in an animal occupying a lower rank in the scale of animated beings; in other words, to what set of nerves in man those found in the lower orders correspond.

It would occupy more space than we can conveniently allow, on the present occasion, to offer in detail the various opinions that have been advanced on the subject of the nature of the nervous system of the lower orders of animals. Suffice it to state, that while some anatomists regard the ganglia and nerves of the latter as corresponding to the ganglionic system of the higher orders; others maintain that they constitute the rudiments of the spinal marrow; others again compare them to the spinal ganglia, and another set refer them to the rudiments of the eighth pair. Taking a comprehensive view of all that has been said on the subject, and particularly by the most recent and able investigators, we should, were we called upon to form an opinion, conclude that there are some classes of animals in which none of the nerves of organic life can be found; consequently, that the opinion of those who contend for the invariable existence of the ganglionic system in all classes of animated beings, is not fully established. We also draw the conclusion from the researches to which we allude, that the ganglionic system, instead of acquiring predominance in proportion as we descend the scale, and finally forming alone the nervous system of the lower animals, as is maintained by some writers, on the contrary, diminishes in the number and size of its ganglia and cords. Already Bécclard, from the researches of others, as well as from his own, had drawn the conclusion that in all animals which, like man, possess a medullary cord enclosed in an osseous canal, the system of ganglia is not developed to the same extent: 1, In having regard to the total size of the body, this system is found to acquire greater extent, in proportion as the animal is more elevated in the scale of animated beings; consequently, in proportion to the degree of perfection in the organization of the latter; 2. Its development is always proportionate to that of the medulla, if we compare both in that respect to the whole

body in general, and not to the brain alone; 3. The great sympathetic follows, also, in its growth, the development of the alimentary canal; 4. Finally, the sympathetic system is likewise connected, in respect to development, with the vascular system.

A circumstance which seems to throw more light on the functions of the sympathetic system consists in this, that *foetuses* have come to the world destitute of cerebrum, cerebellum or medulla spinalis; and yet have appeared to live to the last moments of *utero gestation*. Cases to that effect are recorded by Morgagni, Wepfer, Ruysch, Kerkring, Littre, Sæe, Fauvel, Mery, Huber, Lallemand, &c. In most of these instances the *foetus* was well formed, so that the processes of nutrition and circulation must have continued undisturbed, and the child must have died, at least in some cases, after birth, from the inability of effecting the respiratory movements which require the agency of the cerebro-spinal nervous centre. In such of these infants as were dissected, and whenever due attention was paid to the ganglionic system, it was found perfectly well formed and developed; and, according to Serres and other anatomists, even more so than in other *foetuses*,—a circumstance which indicates that these nerves were adequate to the performance of their functions, whatever these may be. But as we shall have occasion by and by to draw some deductions for the coincidence of the continuance of certain functions with the development of the ganglionic system, and the absence of the cerebro-spinal centres, we shall not dwell at present on these anatomical anomalies, but proceed to offer a few remarks on the origin of the sympathetic system.

The opinions on the subject are, as on many other points connected with the ganglionic system, greatly diversified. By the old writers,—so early indeed as the time of Achilinus and Eustachius, this nerve was denominated *intercostal*, and was regarded as *cephalic*, and as arising from the fifth or sixth pairs, or from both of these conjointly. This opinion was, however, after some time abandoned, and gave way to the idea that the sympathetic system of nerves takes its origin in the spinal marrow; and that instead of deriving its original branches from the fifth and sixth pairs, it sends filaments to these nerves. So far as we can recollect, Petit was the first to advance

this opinion relative to the nature of the correspondence between the ganglionic and cephalic nerves. He was followed by many of his contemporaries and the greater number of his successors, and fully substantiated by Fontana and Girardi. The spinal origin of the sympathetic, and the rejection of the idea that it arises from the cephalic pairs we have named, was early supported by the following reasons: 1. It was remarked that the communication of the former with the branches of the fifth and sixth pairs, takes place at an acute angle pointing posteriorly—a circumstance proving, it is said, that the nerve in question, instead of arising from the fifth and sixth pairs, ascends towards them. 2. That the sixth encephalic pair is larger after receiving the filaments of the sympathetic than before that junction; which tends to establish the fact that the former does not *furnish* but *receives* filaments from the sympathetic. 3. Finally, that the great sympathetic nerve diminishes in size as it approaches the cranium, which is exactly the reverse of what ought to take place did this nerve arise, as was maintained, from the fifth and sixth pairs.

Some time after Petit, Lancisi, Le Cat, Johnston, Winslow, Girardi, and others, described the sympathetic as an isolated system of nerves,—many of them representing the ganglia, which in great part compose it, in the light of small brains, and the filaments uniting these ganglia above to the fifth and sixth encephalic pairs, and all along the spine, with the nerves arising from the medulla, as simple anastomosing branches. This opinion was subsequently adopted by Unzer, Metzger, Hufeland, Proshasca, Sue, Bichat, Reil, Gall, and through means of their influence, by the greater number of succeeding anatomists and physiologists. According to this view of the subject, then, the sympathetic system is composed of a series of ganglia, constituting so many nervous centres, each independent of the other, but all communicating, by means of intermediary filaments, with one another, with the spinal marrow and with the brain.

The arguments and anatomical facts adduced, particularly by Bichat and Reil, in support of this opinion, may be summed up as follows. 1. The branches passing from the spinal marrow to the ganglia of the great sympathetic, redden, and assume gradually, and in proportion as they approach the gan-

glia, all the characteristic features of that nerve; from which we may conclude, remark these distinguished writers, that those nerves are rather branches anastomosing with the medulla, than filaments arising from the latter and giving origin to the sympathetic. 2. The branches passing from one ganglion to another, are in turn single and multiple, small or large; a disposition which does not accord well with the idea of all these branches being a single and continuous nerve. 3. There exists no proportion between the filaments sent off by a ganglion at its lower portion, and those that enter into it from above,—a circumstance which does not favour the idea of the former being the mere continuations of the latter. 4. It is evident that each ganglion, as well as the nerves it furnishes, has their proper texture, by which they are distinguishable from all the others. 5. There often exists interruptions in the course of the sympathetic. Haller, for example, has known it to terminate at the sixth rib, and reappear at the seventh dorsal nerve. Bichat remarks, that it is often interrupted between the last thoracic ganglion and the first lumbar, and between the last lumbar and the first sacral.

It may also be added, that if the sympathetic system arose, or received all its force from the spinal marrow, its anastomosing filaments would not, in their progress to that centre, supposing them really to join it, have been placed in communication with branches and ganglia that belong to the sensitive set of nerves, and which consequently carry their nervous power *towards* the spinal marrow; and secondly, that the mode of junction of those filaments with the spinal nerves, so far from being calculated to make us believe that the former proceed from the medulla, has induced some to think that they do not even join that centre, the intercostal nerve passing the ganglion a considerable space before being joined by the filaments of the sympathetic, which assume with it an outward direction.

Besides these, other reasons, founded on physiological phenomena;—the independence of action of the ganglionic system, &c. have been adduced by the supporters of this opinion. But we postpone the mention of them until we come to speak of the uses and functions of the ganglia and nerves of that system. It is not to be presumed, however, that the opinion we have been considering has been adopted unanimously, and without

opposition. Chaussier, for example, continued to the last to consider the sympathetic as an encephalic nerve; J. F. Meckel regards it as at the same time cephalic and spinal;—placing its origin in several cerebral and in all the spinal nerves; but, nevertheless, considering it as a centre of action independent of the brain and spinal marrow. For this disposition, or property, it is indebted to its numerous points of origin, and to the number of the plexuses it forms; for it is proper to remark, that, agreeably to this distinguished anatomist, the independence of any nerve of the influence of the cerebro-spinal centres, as well as of that of the power of volition, is found to be in direct ratio to the number of points of origin, the number of its plexuses, and of the ganglions through which it passes. A view nearly similar to that of Meckel's is held by professor Treviranus.

Le Gallois, Philip, Béclard, Olivier, Bégin, Gama, Lobstein and others, on the contrary, believe it to be a spinal nerve, and refuse to consider the ganglia as separate little brains. Le Gallois and Philip's reasons are derived, not so much from anatomical peculiarities, as from physiological phenomena, resulting from their experiments, and which led them to adopt certain opinions relative to the functions of the spinal marrow, and its influence on organs supplied with nerves of the ganglionic system, as we shall have occasion to notice hereafter, and to affirm that it is the particular character of this nerve to put all the parts to which it is distributed under the immediate influence of the whole nervous system.—Opinions, however, which did not prevent them from recognising that those parts are by the same cause removed from under the control of volition.

Béclard remarks, that some rare and perhaps badly observed interruptions in the trunk of the sympathetic nerve, have led some anatomists to regard the existence of this trunk as a circumstance of little importance. He considers this opinion as erroneous, but adds, that the *roots* of this nerve (the sympathetic) are evidently to be traced to the spinal nerves, and not to the fifth or sixth pair of encephalic nerves. (General Anatomy, §. 808.) In his additions to Bichat, he observes also, that all that has been said to prove that the ganglia are nervous centres, only shows that there is a great difference of organization between the sympathetic and the other nerves. Mr Craigie in

his General and Morbid Anatomy shows, that at least one part of the opinion of those who contend for the independent origin of the sympathetic system, viz. that the ganglia are small brains,—the originality of which opinion, we must be allowed to say, en passant, he wrongly attributes to Johnston, forgetting that Lancisi, Petit and particularly Le Cat, who certainly preceded Johnston, entertained very similar views on the subject; he has shown, we repeat, that such an opinion respecting the nature of the ganglia is, strictly speaking, incorrect, the anatomical structure, and he might have added, the chemical composition of these parts, being quite dissimilar.

Professor Lobstein affirms, in support of the spinal, and against the ganglionic origin of the sympathetic, that he succeeded in tracing the nerve *through* the cervical, as far as the thoracic ganglia; the nerve in this passage mixing, it is true, with the proper substance of the latter; but, nevertheless, remaining sufficiently distinct to be readily recognised. The same anatomist, moreover, remarks, that he has traced the roots of the great sympathetic as far as the first cervical ganglion.

In support of the opinion of the spinal origin of the sympathetic, it has been contended that some facts, first pointed out, we believe, by Meckel and by Weber, in a memoir on the subject of this nerve, published at Leipsic in 1817, and repeated by Béclard and Lobstein, may be adduced, that the development of the nerve in question is always in direct ratio to that of the spinal nervous centre; that in fish, in which the true medulla first appears, the sympathetic is found in a very imperfect state, while on the contrary in all animals in which the medulla is large, it presents a corresponding increase in bulk; finally, that on examining the sympathetic in the various classes of animals, we discover that it diminishes in size and extent in an inverse ratio to the pneumogastric or par vagum, (8th pair), in such a way, indeed, that in some animals the latter assumes altogether the place of the sympathetic. Can we not admit, it is said, from this last circumstance, that the functions of the two nerves being in some classes similar, their origin should be also considered as the same; in other words, that the par vagum originating in one of the great nervous centres, the sympathetic should be traced to the same centre,

or its spinal prolongation. But Treviranus, who considers that all nervous ramifications arise from true ganglia,—and by these he means those in which there is a complete decomposition of these fibres, is disposed to think that the functions which Weber attributed to the par vagum were, in reality, performed by the sympathetic, rendered, from some anatomical peculiarities, more subject to the influence of the sensitive sphere (action of the nervous centres of animal life) than it is in mammiferous animals. “Copulation in fish without sexual intercourse, is a fact which it is difficult to explain, unless we admit that there take place in them certain impressions which, operating solely on the olfactory and optic nerves, that is to say, on the superior sensitive sphere, are capable of producing in them, without the immediate excitation of the genital organs, the excretion of the eggs in the female, and of the semen in the male; and, consequently, that their great sympathetic nerve, at least in what relates to the genital parts, must be less independent of that sphere than it is in the superior classes of animals. In reference more particularly to Weber’s opinion, Treviranus remarks, “with the exception of the great cord of the nervous vagus, which in fish passes down on each side of the body, the ramification of this pair takes place in the same manner as in the superior animals; but this distribution would necessarily be very different, if the whole of the vagus nerve acted as the *vicar* of the great sympathetic. The lateral cord already mentioned is the only one which might be supposed to exercise a function entrusted to the sympathetic in the superior classes. But its course and its ramifications induce us to suppose, that it only presides over a function peculiar to fish, rather than that it exercises an influence over a function common to fish and to the superior animals, and over which, in the latter, it is only the sympathetic that exercises any influence.” According to this author, the large size of the par vagum in fish, compared with that of the sympathetic, depends on the greater energy required in organs which the former supplies than in those entrusted to the influence solely of the latter*.

* Mr Serres thinks that the branch of the eighth pair, which Weber regards as the *vicar* of the sympathetic, is analogous to the recurrent nerve of Willis, the

The question relative to the origin of the sympathetic nerve is not one of mere curiosity, for it involves that of the origin of the nervous power of that system. But whatever view we may adopt relative to the derivation of the nervous influence of the sympathetic;—whether we admit that it comes wholly or only in part from the spinal marrow, we are not sure that we can be justified in saying that the sympathetic *arises* from the spinal marrow; and it is but justice to remark, that several of the anatomists and physiologists we have found to advocate this origin, have not understood a physical one, that is, that the sympathetic *grew* from the spinal marrow, but merely wished to convey the idea that the nerve in question derived, to a greater or less extent, its power from that centre. We believe that all modern investigators into the anatomy and physiology of the nervous system of animal life agree in the opinion, that it is improper to refer the origin of the cerebro-spinal nerves to the great nervous centres; in other words, they deny that those nerves proceed *from* these central masses, and contend, that they are all formed at the same time with the latter, proceed towards them, and unite with them some time after the first development of the embryo. We might, a priori, conclude, therefore, that the same law of organology obtains in respect to the sympathetic, did we not possess positive proofs, derived from the anatomical researches of very high authorities in our science, of this simultaneous origin of the different orders of nervous cords and ganglia;—of the sympathetic observing the same laws as other portions of the nervous system;—of its originating in the parts in which it is found;—following the development of these parts;—disappearing in monsters by default of parts, and multiplying in those that present a multiplicity of parts;—of its growing *toward* the great centres, and of its placing itself in relation with them like every other nerve.

The principal point then in this inquiry is to ascertain whether really the sympathetic system possesses the power of acting independently of the nervous system of animal life—of the

development of which has attained its maximum, owing to the greater respiratory power required in this class. He rejects the views of Weber in respect to the vicarious action in question, owing to the relationship existing between the sympathetic and the vascular system, to which we have already alluded.

brain and spinal marrow—or whether it derives its energy from the latter. This will best be done by inquiring into the functions of the ganglia and nerves separately; though by so doing we are not prepared to draw a line of demarcation between the functions of these parts; in other words, of separating them into two systems, instead of regarding them as two portions of the same system.

Are the ganlia and nerves of the sympathetic system endowed with sensibility? This question deserves to arrest our attention a few moments, because on the manner in which it is answered will depend the solution of a point of some interest in a physiological sense. M. Magendie states that, having cut, pricked, and torn the sympathetic ganglia of the neck in dogs and horses, he found that the animal was not conscious of the operation; in a word, felt no pain. From this he concludes that these parts are not endowed with sensibility, by which he means, no doubt, animal sensibility. Long before his time Bichat, Wutzer, and since them Lobstein, had gone far to show that the symphathetic is insensible to mechanical irritations. Haller had, it is true, found, on one occasion, that pain was excited in a dog by irritating the hepatic plexus: but still many were inclined, from a recollection of the results obtained in the experiments of the physiologists we have cited, to attribute the effect in this case to some accidental cause, rather than to the true sensibility of the nerves. Within a few years the experiments of Mr. Flourens seem to have thrown some light on that subject. From these experiments, which it is useless to detail in this place, we may conclude with M. Flourens, 1. That the semi-lunar ganglion is always, and very, excitable; pain having always been the result of its mechanical irritation. 2. That the other ganglia are also excitable, but only occasionally so, and even then in a slight degree. 3. That all which the most accurate observers have said respecting the *high nervous power* residing according to them in the diaphragmatic region, and celebrated under the name of *archeus, præses systematis nervosi*, phrenic centre, epigastric centre, &c. appears in some measure justified by the extreme susceptibility of the semi lunar ganglia. It is right to remark here, however, that in all these experiments the ganglia alone were irritated, and not the nerves; consequently, that no deductions can be drawn from

them relatively to the sensibility or want of sensibility of the latter.

Mr Flourens it is true concludes, moreover, that the effects thus produced,—this faculty of transmitting pain which appertains to no part except the nerves of the spinal marrow and brain, demonstrates in a positive manner the intimate union existing between the latter and the sympathetic; but we are yet to be shown that the sensation of pain was conveyed exclusively by the nerves of the sympathetic, as we see no reason to refuse admitting that the ganglia, or at least their coverings, are supplied with nerves of animal life. We have reason to believe, indeed, that the nerves of the sympathetic in their natural state are not endowed with that kind of sensibility which is perceived by the sensorium, and is called animal. But, at the same time, we believe, that under particular circumstances they become the seat of pain. We perceive every day that inflammation of parts which in the healthy state are insensible, produces great pain. Gastralgia may be sufficient for an example. But even in the natural state they are the means of conveying sensations to the brain, which call forth in that organ movements of various kinds; or simply to those parts in the neighbourhood of those on which the impression has been made.

It is perfectly well known, from the experiments of Fowler, Rinhold, Webster, Nysten, and of Mr De Humboldt, although Mr Lobstein has failed in their repetition, that the galvanic fluid produces an effect on the sympathetic system, and through this on the parts it supplies with nerves. No pain, it is true, seems to have been produced by these experiments, so that it will be unnecessary to refer to them particularly. Yet they tend to show that the nerves of the sympathetic convey sensations or impressions, and are consequently irritable. Mechanical irritations show the same, and Magendie relates, that having divided the two cords of the par vagum of a dog, he introduced some tartar emetic into the stomach of the animal; in five minutes after vomiting took place,—which proves, according to Magendie, and we would suppose, according to every one else, that the sympathetic had conveyed the sensation which caused the sensorium to command the movements necessary for the accomplishment of that effect. Indeed we might, a priori, and without waiting for such experiments, conclude that the sympathetic nerves, though

conveying, in the natural state, no sensation of the acute kind, do convey *some* sensations, since the parts they supply with nervous branches receive, so far as we know, but few, some very few, if any, twigs from the cerebro-spinal nerves, and yet are in direct and close relation with the cerebro-spinal centres, transmitting to them commands necessary for the execution of required movements. We may find illustrations of this fact of nerves having the power of conveying sensations, and yet being insensible, using that word in its common acceptation, in the nerves of the third, fourth and sixth pairs, the portio dura of the seventh, though in a less degree than the preceding; the hypoglossus nerve; the anterior branches of all the nerves arising from the spinal marrow; the optic, olfactory, and acoustic nerves, all of which possess sensibility; since they are enabled, some to convey to the centres peculiar sensations, others to various parts of the body, the commands of those centres; and yet some of them when pricked or cut convey no pain, others very little. All we can conclude from these facts is, that the sympathetic is endowed, like the other nerves we have enumerated, with a special kind of sensibility, by which it is enabled to convey sensations to the centre without awakening the consciousness of the individual; in a word, that it is endowed (and consequently endows parts to which it is distributed) with that kind of sensibility which Bichat has called organic; but that when in a diseased state it acquires to a certain extent the real animal sensibility, and conveys painful sensations to the mind.

From his experiments on the ganglia, (by the removal and irritation of which, as we have seen, no pain was produced), and from other circumstances, such as the want of analogy in point of colour, form, consistence, disposition, structure, textural or chemical properties between the sympathetic nerve, considered *en masse*, and the nerves of animal life, and at the risk of contradicting his own admissions, that the sympathetic conveyed to the sensorium the sensation of the impression produced in the stomach by tartar emetic, and that some other nerves are deprived of animal sensibility, M. Magendie concludes that the great sympathetic is not a nerve. (Note to p. 171, vol. i.) If it be not a nerve, what is it? This question M. M. does not pretend to solve, and remarks, that it would

be wiser, and particularly more useful to the progress of physiology, to confess, that in the present state of our knowledge the uses and nature of the sympathetic are entirely concealed from us. It is well to add, before we proceed any further, that M. Magendie seems disposed to doubt that the doctrine which attributes to the sympathetic an agency in the transmission of internal sensations, has any foundation in truth; and, secondly, that his view of the non-nervous nature of that system is also based on this, that in his experiments the parts supplied with filaments from extirpated or wounded ganglia were not affected.

In opposition to this view of the subject, and to the facts on which it is founded, we have only a few words to say.

1. We are not justified in denying the nervous nature of the sympathetic on the ground of the want of resemblance between it and the *real* nerves; for independently of the fact, that some respectable anatomists contend that this difference is not as great as M. M. appears to think, and that there is considerable analogy at least between the splanchnic cords and the cerebro-spinal nerves, and between the small ramifications of the sympathetic and those of the pneumogastric, it is not greater, we mean in appearance, than that existing between the acoustic, optic and olfactory nerves,—and between the portio molis and portio dura of the seventh pair. And yet no one thinks of denying the nervous nature of either of these cords that differ most from the rest.

2. If the ganglionic or sympathetic is not nervous, how comes it that nature has caused it to communicate with the cerebro-spinal centres by means of filaments. We see no tendinous, muscular, bony filaments—no substance of any kind with which we are acquainted, in the system, anastomosing with, or running into the nerves, except nerve. This alone would lead us to *doubt* whether M. Magendie has any reason to *doubt* on the subject.

3. Nor can his scepticism be justified in regard to the insensibility of the ganglia and their nerves; his experiments on the cervical ganglia of dogs and horses merely show that these ganglia are insensible; and surely from this fact no one is authorised to conclude that *all* the ganglia are insensible. We have already stated that M. Flourens has

found the semi-lunar ganglion to be always very sensible when pricked or irritated by any mechanical means. Our second reason is, that were we to consider the want of sensibility in a ganglion and nerve as a proof of such parts not being *nervous*, we should be forced to admit that cords, and other parts, which every one, even M. Magendie himself, considers as nervous, are not of that nature; since, according to his own showing, they do not convey painful sensations when pricked, cut, &c. Our readers will recollect what we have said, but a few pages back, of the insensibility of the optic, acoustic and other nerves,—a fact which, indeed, we stated principally on the authority of M. Magendie. To this may now be added, that the cerebral and cerebellic hemispheres have this analogy with the former, that they do not convey pain when pricked, torn, cut, and even when submitted to the action of the actual caustery. Will M. M. feel disposed to deny that these parts are nervous? The inference would be as fair in one case as in the other.

4. If the sympathetic is not nervous, it would follow that parts in which no nerves of the cerebro-spinal system have been traced, and which, in all likelihood, possess none such, have no nerves at all. In this case, how are the sensations arising or produced in them conveyed to the centres? We know of no mode of communication by which this can be effected, except by nerves; and the very fact, that these sensations are conveyed, and that the cords of the sympathetic are the only ones with which such parts are supplied, would be sufficient to show that they are nerves. M. Magendie in this has contradicted himself, for, as we have seen, he admits in another volume of the same work, that emetic tartar, when introduced into a stomach whose nerves of animal life were previously cut, excited vomiting, and he attributes the effect not to absorption, (for he himself remarks, that the time which elapsed between the introduction of the article and the efforts for its ejection, was too short to account for the effect by absorption), but to a sensation conveyed through the sympathetic nerves with which the lining membrane of the stomach is plentifully supplied.

5. If M. Magendie allows thus much in the above case, we can see no reason why he should deny that internal sensations

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are conveyed by the sympathetic, although no positive experiments may have shown it to be the case. We have a right to infer it, for our internal sensations are the effects of our wants, and our wants, whether to receive or reject, are themselves the effects of excitations of the membranes of relation. Now what signifies whether the want be produced by tartar emetic or by fecal matter, urine or any other foreign substance. In all such cases an excitation is conveyed to the brain to elicit there the command of certain movements necessary for the execution of the operation of ejection. If the sympathetic nerve does it in one case, what right has M. Magendie to deny that it does it in the others. The want of air in respiration, of food for the sustenance of the body, of water to quench thirst, always act by creating stimulation of the membranes of relation. Hence arises the internal sensation which is conveyed to the brain. Now if the sympathetic has been found adequate to this conveyance in the case of the tartar emetic, why refuse to admit that it may be equally so in the latter instances? It is no argument to say, that in some of the instances in which the sensations produced by the wants, nerves of animal life may serve to account for their conveyance; for in the instance recorded by Magendie, the nerves of the eighth pair had been cut, and there remained to account for the phenomenon no other nerves than the sympathetic. The question is not what part the eighth pair would have played in the effect in question, had they *not* been cut, but what was the means of transmission; and whether that nerve would have been the sole agent or not, in the natural state, matters not at present: all that is necessary to settle being simply, that in some cases the sympathetic has effected the transmission, as this alone is sufficient to prove that it is a nerve, and that M. Magendie has been found guilty of contradiction.

6. Let us admit, for the sake of argument, that the sympathetic, in the natural state, has no sensibility of any kind, consequently that it does not convey sensations; in a word, that it is not a nerve. How shall we account for its sensibility in a diseased state? A part which is sensible in a healthy or diseased state and is not nervous, must be supplied with nerves; sensibility being the appanage of the nervous system. Now where are the nerves *supplying* the sympathetic and endowing it with sensibility when in a diseased state? This

affords us the opportunity of pointing out another inconsistency in the work of M. M. He remarks, at page 170, vol. 2, that "the intestines acquire sometimes, especially when in a state of disease, a very high degree of sensibility, and become often the seat of excruciating pain. As they hardly receive nerves from the cerebral pairs, it is probable they owe their sensibility to the filaments of the great sympathetic, although no direct experiment has yet proved it." It is difficult to reconcile this faculty in the sympathetic with the idea of its not being a nerve.

7. The argument founded on the circumstance, that in the experiments made by M. Magendie, the functions of the parts supplied by the branches of the ganglionic system were not impaired, is not entitled to much attention, though in some measure supported by the results obtained by Edwards and Vavasseur; for they are contradicted by those of Brachet, Dupuy, Enns, &c. as well as by phenomena observed in diseases of the ganglionic system.

Scepticism, when restrained within proper bounds, is, in matters of science, as indeed in every other, highly commendable. In physiology and pathology particularly, we are the first to recognise the absolute necessity of a due proportion of it; for he who gulps every thing he hears or reads, is not worthy of being styled a philosopher, the province of whom is to arrive at truth by a severe scrutiny of facts; and he runs the risk of adopting, as truths, many things that are the result of sports of imagination, and which may lead to an erroneous treatment of disease. But in these sciences, as in every other thing, we may carry this spirit of scepticism too far, and will, whenever this is the case, often deny the accuracy of things which afterwards are recognized to be substantial facts—thus remaining in arrears of others, allowing ourselves, in fact, to be dragged along by the current of science, not keeping pace with it, and still less giving it an impulse. If we inquire who those were who contributed,—who those *are* who still contribute,—to the advancement of science, we shall find that in no instance did they belong, or do they belong, to this class of sceptics; and certainly, if M. Magendie deserves to be considered in the light of a promoter of science, it is not on those points in which he has been so backward in believing, as he

appears to be on the occasion of the nervous nature of the sympathetic. There are many points in physiology that are recognized by the soundest minds as demonstrated truths, though no direct experiments may have been made to lead to this conclusion, while a great many are recognized as truths founded on experiments, which are still doubted by minds of equal solidity. This shows that mere experiments on living animals are often fallacious; and even supposing they were not so, at least they are not the only means we possess for arriving at a knowledge of the nature and functions of the various general tissues, as well as of the organs of the body. If M. M., therefore, believes only what his experiments show him, or what he *thinks* they show him, to be facts, and *doubts* every thing else, he will, we fear, often establish conclusions which will be as often incorrect as otherwise, and disbelieve things which every one else as clear-sighted as himself recognizes as truths, thereby allowing himself to be led often *ad absurdum*, and deserving of being classed with certain men who constitute the rear-guard of the legion of savans;—in a word, he will be in physiology what Pinel was in pathology, one of the real Wouter Van Twillers of the science.

Assuming then as a demonstrated fact that the sympathetic or ganglionic system is *nervous*, we proceed to inquire into its functions.

Of the ganglia.—Willis, Petit, Le Cat, Winslow, &c. considered, as we have already seen, these bodies in the light of small brains, whose office is to secrete the animal spirits. Lancisi and Vicq D'Azyr regarded them as the centres of impulses, and compared them to the heart, supposing that they act by promoting the transmission of those spirits, or as reservoirs in which these are kept in readiness for the supply of the demands of the body. Johnston entertained an opinion nearly similar to that of the first set of physiologists, and believed that the office of the ganglia consists in impeding the transmission of sensations, as well as of the influence of the will in the nerves that emanate from them;—an office essential for the regular and independent play of the functions of certain organs, as the heart for example. But he held also that these little brains are capable of developing and communicating nervous influence, and give origin to the involuntary nerves. Others affirm, on the contrary, that they serve to concen-

trate and reinforce nervous action, or distribute it uniformly to the several apparatus of the nutritive functions. Scarpa, adopting in some measure the opinion of Meckel and Zinn, thought himself justified in the belief, that the ganglia are destined to divide, mix, and reunite the nervous filaments. "According to him, all the visceral nerves arise directly from the spinal nerves, and from the fifth and sixth cerebral pairs, and are merely united in the ganglia" to be thence distributed. Bichat, Reil, Gall and many of their successors and contemporaries, modifying and extending the views of Johnston, regarded the ganglia as the centres of as many particular nervous systems, and as analogous to the ganglia which, according to them, compose alone the nervous system in animals in which the latter presents the greatest simplicity. Dr Lobstein also, in his elegant work on the sympathetic, joins in this belief, regarding the ganglia as the laboratories of the nervous principles distributed to the organs over which they preside.

From this it appears, therefore, that, making allowance for certain peculiarities of views existing at various times, and arising from the manner in which the operations of the economy were explained, the opinions relative to the functions of the ganglia may be arranged, as Béclard has remarked, into two classes. In the first will be placed that maintained by Meckel, Zinn, Scarpa, &c. by whom these functions are thought to be limited to a mechanical process—that of facilitating the distribution, &c. of the nervous fibres. In the second class we place those of Willis, Petit, Le Cat, Johnston, Bichat, to whom may be added Reil, Wutzer, Lobstein, Broussais, &c. by whom functions of a more elevated order,—essentially vital, as we have just seen in detailing those opinions separately,—are attributed to the ganglia.

The arguments adduced in support of both these opinions seem to us to be worthy of attention; for on a careful investigation of the subject it will be found, that neither of them can be regarded as sufficient, if adopted, to the exclusion of the other. In a word, there are phenomena which go to show that the ganglia act, or seem to act, in a manner independent of the cerebro-spinal centres; while it is evident that certain impressions starting from these centres penetrate through the ganglia, and influence, to a greater or less extent,

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the action of the organs that are supplied with filaments from the sympathetic.

That the opinion of Johnston and Bichat is not destitute of foundation, we may infer from this circumstance, that the same relationship which exists between the cerebro-spinal centres, and the nerves that branch off from them, be they of motion or of sensation, is observed to exist between the ganglia and the sympathetic nerves; namely, that as the nerves of the former system diminish in size as they recede from the brain and spinal marrow, so the nerves of the sympathetic diminish in size as they recede from the ganglia. We find, also, that the action of the cerebro-spinal system is not necessary for the exercise of certain internal functions, since these functions are performed in the foetal state, when the nerves of animal life and their centres are quiescent, and even in cases in which the latter are totally wanting,—the child coming into the world, nevertheless, fat and well made, and his circulations having continued to the last moment; circumstances which, as we have seen, show that the nutritive process, as well as the action of the heart, arteries, and capillaries, have remained unimpaired. During life, also, we find that the operation of organs supplied with ganglionic nerves continue unobserved by the cerebro-spinal centres, and without in the least affecting these; that impressions made upon these parts create, in the natural state, no pain; that common stimuli applied to the nerves of animal life do not influence the others; that after destroying the spinal marrow in living animals the action of parts supplied with ganglionic nerves may, by some means we shall mention by and bye, be made to continue, &c.; that the structure of the ganglia of the sympathetic are somewhat different from that of the other ganglia, from which must result a difference in the functions of each class; that during sleep and in apoplexy, the functions of parts receiving nerves from the ganglia continue though the action of the other system of nerves be suspended; that in all cases, parts supplied with nervous power by the sympathetic are placed beyond the control of the will.

The nerves, besides, which supply these parts, arise from the ganglia; hence it is fair to conclude, that in those cases in which the spinal marrow and brain did not exist, or was de-

stroyed, the nervous energy was derived from the ganglia; since it must be derived somewhere, and cannot be supposed to be furnished by an organ which no longer exists, or has never existed?

Perhaps, also, the results of experiments on the ganglia, and the phenomena observed in diseases of these parts, could be cited in proofs of their great influence in sending through their nerves a degree and kind of innervation peculiar to themselves. The reader need but refer to the younger Le Gallois's paper on the subject of the diseases of these ganglia, contained in the *Revue Médicale*, and in which, independently of some interesting cases, he will find an account of M. Dupuy's experiments; to Mr Teale's work on neuralgia, and to M. Brachet's work on the functions of the ganglionic system, to be convinced of the power these ganglia have of developing nervous influence.

In support of the other opinion, it is alleged that the independence of the ganglia is not so absolute as is maintained by the supporters of the theory of Johnston and Bichat, since the effects of impressions originating in the cerebro-spinal system, as passions of the mind, principally, are transmitted to organs regarded as exclusively under the control of the sympathetic—the heart for example; that impressions made on the gastric surface, whose nerves are furnished by the ganglions, are conveyed to the brain and spinal marrow, as proved by the fact that certain movements, which it is not necessary to specify, are called into play, even after the division of the nerves of animal life; that these surfaces become in some instances the seat of pain, which indicates that the brain has received an impression. By some it has further been objected against the opinion of Bichat, that no reason can be found why the vertebral ganglia should not perform the same office in regard to the parts they supply with nerves; and yet that these spinal ganglia being attached, without a single exception, to nerves which bestow sensibility, do not cut off sensation, as those of the sympathetic system are supposed to do. And Haasen, who regarded the ganglia in the light of plexuses, has objected to the theory of Johnston, on the plea that the voluntary muscles receive ganglionic nerves, and that those of the involuntary muscles often do not arise from those ganglia.

Without pretending to lean more on one side than on the other of the question before us, we must be allowed to remark that the two last arguments we have mentioned in opposition to the independence of the ganglia, are not as conclusive as some physiologists have thought; since the spinal ganglia are not precisely organized like the others, and belong to a distinct system, having particular and distinct functions to perform, and may therefore not cut off sensibility, while the others may be supposed to do so, without our violating the laws of common sense. As regards the objections of Haasen, it may be replied, that the voluntary muscles which receive nerves of the sympathetic kind, receive also some from the other system, and that consequently the latter must be regarded as sufficient to explain the influence of volition over them,—the former serving for different purposes, which will be mentioned in due time; and that the stomach and other parts supplied with the eighth pair, (which, by the way, is so far, by its anatomical and physiological peculiarities, removed from under the influence of the will, as to be regarded by Treviranus and Lobstein as a nerve of vegetative life), are also abundantly supplied with ganglionic nerves.

From all we have seen and read on the subject of the functions of the ganglia, then, we believe they may be regarded as, to a certain extent, centres in which nervous power is developed, and from which it is communicated with that derived from the spinal marrow to the parts they supply with nerves; that they shield the parts they furnish with nervous energy, from the empire of the *will*; that these centres are, in a great measure, subordinate to the great cerebro-spinal centres; that they act in impeding the transmissions of ordinary impressions from the great centres to the organs they supply; but that they are not so isolated as to prevent the transmission of powerful impressions. A few facts will serve to exemplify this. While the ordinary operations of the mind do not affect the involuntary organs, the different passions are however well known to do it, and to a remarkable degree too; the action of the galvanic pile on the lumbar ganglions, in the experiments of Wutzer and others, gave rise to convulsive movements, while a less degree of irritation did not give rise to a similar effect. The ganglia seem even in these cases to act by *diminishing*

the influence of the great centres, and on the other hand, to diminish the force of transmission of an impression to the same centres. It is to be borne in mind, however, that, as we have already remarked, the whole mass of ganglia and nerves which are collectively denominated *sympathetic*, do not constitute *one* system, with but *one* function to perform; but that one part belongs, probably, to the nutritive functions, while another is destined for sympathetic or associating purposes; and that consequently the ganglia of each portion have a different function to perform. But this does not affect the question before us; since we may suppose that both are to a certain extent under the dependence of the cerebro-spinal system, though at the same time constituting independent centres. We should suspect, however, that the ganglia of the nutritive functions are more independent than the others, and that the parts they supply with their peculiar innervation are only affected by impressions starting from the cerebro-spinal system, through the agency of the sympathetic portion of the ganglionic system.

This subject will necessarily be alluded to once more, when speaking of the sympathetic *nerves*; to which subject we next turn our attention.

It is evident, that the cords of the sympathetic have for their function the transmission of nervous influence, since they are nerves, and nerves so far as we know have no other function than this transmission. Yet, from what we have seen of the functions of the ganglia, it will readily be inferred that this transmission is not effected exactly as that which takes place through the agency of the nerves of animal life,—with equal certainty under all circumstances, and whether the impression be made with one sort of agents of stimulation or another. In many respects, indeed, the sympathetic nerves may be regarded as very imperfect conductors, compared at least with the cerebro-spinal nerves. Thus it is a fact which experiments have demonstrated, and on which we need not, therefore, dwell long at present, that chemical and mechanical irritations produce no effect upon them, or rather that the impressions such irritations occasion are not propagated through these cords to the parts they supply, while, on the contrary, galvanic irritations are transmitted rapidly through them, and either produce contractions or give rise to sensations of which the individual may be, under cer-

tain circumstances and to a greater or less degree, conscious, and which are very similar to those experienced in morbid intestinal, nephritic, hepatic and similar irritations.

The question, however, is not whether the branches of the ganglionic system transmit or not nervous influence ; but what part they perform in the economy by the transmission of this influence. In examining this question we must speak of the ganglionic system as a *whole*, without any reference to each portion of it individually; for it is impossible, in any investigation relative to the function of this system, to separate, even in thought, the nerves from the ganglia; since the cords do not act alone without the agency of the ganglia,—supposing these to be centres of action, or merely reservoirs of nervous influence ; and we can readily comprehend, that without cords, the process of innervation could not be accomplished, come the power whence it may. However, in treating separately of the different modifications of functions over which the sympathetic system seems to preside, we shall endeavour to point out the agency of the various divisions of this intricate portion of the nervous system.

The notions of the ancient writers relative to the agency of the ganglionic system in the operations of the economy were necessarily imperfect and unsatisfactory. With slight differences of sentiment among them, they appear to have considered the great sympathetic as being principally useful in establishing the connexions that exist between the various parts of the body; hence the name by which they designated this system. It was not long, however, before physiologists found that such could not be the only function this nerve was called upon to perform ; nay, it was even denied that it formed the communicating link between the different organs ; because parts sympathise together, although not anatomically connected (at least evidently so), by means of this nerve ; and because in many cases a sympathetic union may be destroyed by dividing the nerves of animal life, with which the parts are supplied—the filaments of the sympathetic remaining entire.

Nothing of importance, indeed, appears to have been discovered relative to this important point of physiology until the time of Johnstone, Bichat and Reil, whose views on the subject may, to a certain extent, be inferred from what we

have said of their opinion relative to the function of the ganglia. Observing, 1. That the organs of the involuntary functions, as for example of digestion, respiration, circulation, &c., require, in order to be able to perform with due regularity the important offices with which they are intrusted, the integrity of the nerves distributed to them. 2d. That the nerves of these organs are in a great measure derived from the ganglionic system. 3. That the nerves of the great sympathetic manifest properties very different from those possessed by other nerves; for example, that while these are endowed with great sensibility, the former appear insensible, and may, consequently, be cut and burnt without imparting a sensation of pain;—from a consideration of these circumstances, the two last distinguished physiologists we have named have hazarded the conjecture, that the great sympathetic is charged with regulating those functions in the economy that are independent of volition, and performed without the consciousness of the individual. Hence the name of nervous system of organic life, which the mass of visceral ganglia and nerves attached to them have received, to distinguish it from the other masses and cords which are designated by the name of nervous system of animal life, and are composed of the cerebro-spinal centres, and the cords that emerge from or rather are in direct relation with them; the former being supposed to preside over the involuntary and unfelt functions—over the organic operations of the system; the other over the functions of animal life, or those which, in consequence of establishing a relation with external objects, have been denominated functions of relation.

The opinion of Bichat and Reil has in great measure received the sanction of the physiologists of the present day, who think they have recognized the fact, that the sympathetic presides over the nutritive, secretory and circulatory functions; that it is the regulator or the source of the nervous power which animates the heart, the alimentary canal, the genito-urinary apparatus, and constitutes the bond of union existing between the organs of vegetative and those of organic life;—all of which phenomena are executed with regularity, although the individual has not the consciousness of the fact, owing to the isolation of this system from the general nervous system whence voli-

tion starts, and where impressions converge. M. Lobstein himself, who believes in the identity of the two nervous systems, has, nevertheless, adopted the opinion of Bichat respecting the independence of the sympathetic, for he defines it, "a nervous system which exists in the lowest scale of animals, is peculiar to the nutrient organs, and performs its functions through an especial power, which antecedently to the appearance of the brain constitutes a nervous centre, and which, when the cerebral centre exists in animals, is connected with it; but never composes with it one individual apparatus." He places in its centre all the sensations perceived at the epigastrium, a centre which Wrisberg has denominated the abdominal brain.

Without pretending to express the opinion that Bichat, Reil and their followers have succeeded in establishing their theory beyond the possibility of doubt and cavil, we believe that it may in many respects be regarded as preferable to any other with which we are acquainted,—as meriting at least serious attention, in the explanation of physiological and pathological phenomena; and as serving to dissipate the obscurity in which several of the operations of the economy had been involved. We cannot help noticing here, that the independence of action of the sympathetic was a necessary provision of nature; since this nerve supplies parts intrusted with functions, which in order to the preservation of life must be continued without any interruption—an advantage that could not have been obtained, had the nerve presiding over the organs intrusted with these functions been subjected to all the vicissitudes of impressions to which the nerves of animal life are constantly liable, and to the influence of volition. This indeed would alone suffice to establish a line of demarcation between the two nervous systems (continuance of action in the one, intermissions in the other), and render very probable the theory of Bichat respecting the two lives, animal and organic, and the agency of the two sets of nerves over them. But more of this presently.

Mr Charles Bell, who, as is well known, has greatly distinguished himself within a few years by his researches into the functions of the nerves, but who, having found nerves of sensation and nerves of motion forming together a nervous

circle, does not appear to know what to do with the visceral nerves, combats the opinion of Bichat respecting the functions of the ganglia and sympathetic nerve, on the ground that the name of ganglionic is not correct, since thirty-one pairs of large ganglions in regular order and carefully protected, like important organs, are to be found in the nerves of the head and spine;—that there was no discovery on the part of Bichat, since others had already shown that the sixth nerve was not the root of the sympathetic, and the opinion of its independence of the brain had already been propagated; that the nerves which are found in the lower animals, and give them the power of sensation and volition, (attributes which Bichat denies to the sympathetic,) are not, as maintained by this author, the rudiments of the ganglionic system in man. (See his Lectures delivered at the College of Surgeons in 1828, *Lond. Med. Gazette*, vol. i. p. 556, &c.)

From this and from having nerves of motion and sensation, either regular or superadded, to account, as he thinks, for all the functions, Mr Bell concludes that we know nothing of the use of these nerves; and that all that has been said on the subject is erroneous. His language is worth quoting: “you know,” (he addresses his class,) “that they have long been called the sympathetic nerves, because all the connexions of the parts, whether in the performance of their natural functions, or exhibiting the symptoms of disease, were accounted for through these nerves; even when you sneezed, the consent of parts was explained by the relations established through this extended nerve. Not one word of this is true. The sympathetic system of nerves ministers neither to sensibility nor motion of any kind: they have nothing to do with the operations of the sensorium, and all the actions of the respiratory organs are independent of them. They are known to us only by their negative qualities, and we are left to conjecture their uses; that they may serve to constitute the living body a whole, forming that bond which unites the several viscera together; making one dependent upon the other, forming them into a circle; uniting the body, the head, and limbs, so as to be one in constitution; they may be subservient to circulation, secretion and absorption. I can see no objection to the term sympathetic system; or, if you choose, the consti-

tational; as they are the means through which the constitutional powers are exercised, independently of sensibility or motion." Mr Bell has repeated the same sentiments on this nerve, nearly in the same language, in the introduction to his work, on "the Nervous System of the Human Body," published in 1830, and adds that "constitutional peculiarities, fever, and general derangements of health must belong to this system of nerves."

By those who are acquainted with the labours of Mr Bell, it will be admitted, that he has contributed, in a considerable degree, to the advancement of our knowledge relative to the functions of the nerves; that he has even made some useful discoveries in this department, and thereby helped to dissipate a portion of the obscurity, in which many operations of the economy were previously involved. But we cannot be made to admit that he has said on the subject of the nervous system *all* that ought to, or might, be said upon it; that he has brought the subject to a degree of certainty equal to a mathematical demonstration; in a word, that he has settled the matter beyond the possibility of dispute. We know, indeed, that his opinions have not received the sanction of all his contemporaries, and that many of his views respecting the functions of some of his superadded nerves, about which he and his friends have said so much, are stubbornly opposed by physiologists of high rank in and out of England. This, however, could have been foreseen, for Mr Bell can have no more pretensions to infallibility than he ought to have, if we were to judge only from the specimen before us, to consistency, logic, clearness of thought, or accuracy of language. Let us remark, en passant, that the sympathetic has proved a kind of stumbling block to the two great physiological rivals of England and France, and that on the subject of this nerve they have been led, not from a more careful analysis of physiological and pathological phenomena, and from the results of experiments, upon which the doctrine of the functions of the sympathetic could alone be established; but from the particular views they have adopted respecting the functions of the cerebro-spinal nerves, to advance strange things, and to come to conclusions more or less at variance with established facts and received opinions. Of the idea of one of those

writers relatively to the *non nervous* nature of the ganglionic system, and of the inconsistencies into which this idea has led him, we have already spoken somewhat at large. As regards the English Haller, we will confine ourselves to a few remarks. Had Mr Bell simply said "I know nothing of the uses of these nerves," we should not have pretended to find fault with him for so doing, for we are ready to maintain that every one has a right to avow his ignorance on any subject, without being amenable to the censure of a reviewer. Considering the way the world runs now a-days, we would even give an author credit for the unusual degree of frankness such a conduct would indicate. But Mr B. has made use of the word *we*, by which he indicates every one—a general charge of ignorance on his contemporaries, which all of them may not be pleased to hear, and which calls for a few remarks on the principle of self defence.

It will be seen from what precedes, that Mr Bell offers not one word of argument to disprove the views of Bichat, and that his objections to the term ganglionic and to the claims of priority are trifling and unworthy of him. We may also remind our readers, that some of the assertions, by which he tries to combat the French physiologist, are disproved by facts we have already stated, and which are recorded by writers of equal authority in the science with himself; and that on the subject of the sympathetic we have merely his *ipse dixit*, unsupported by a shadow of proof, and rendered still less admissible from its being obscured by the most glaring inconsistencies. Thus we are told, that the sympathetic is not destined to fulfil the uses which former physiologists have pointed out—that we know nothing about its uses; yet in the same page it is allowed that these functions may consist in something which he has specified, and this something is precisely what was contended for by other writers! We are told that the sympathetic system neither ministers to sensibility nor motion of any kind, and yet that it may be the bond of union which unites the several viscera together,—an office it could hardly fulfil unless it possessed sensibility of some sort or other; that it has nothing to do with the operations of the sensorium, and yet forms all the viscera into one circle, and unites the body, the head and limbs; that these nerves may be subservient to circulation, secretion and absorption, and all that independently of sensibility or mo-

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tion; that constitutional peculiarities, among which are strangely enough placed *fever* and general derangements of health, belong to this system of nerves, although these are destitute of the usual characteristic properties of nerves.

For us a cord which ministers neither to sensibility nor motion is not a nerve and cannot link parts together nor influence any function. It hence follows, that all Mr Bell has said on the subject of the sympathetic merely proves, at least to our minds, that this nerve was in his way, and embarrassed him in his beautiful theory relative to the functions of other branches, regular or superadded. But this is not all: in the same lecture and in the same introductory chapter, Mr Bell censures Bichat for admitting the existence of two nervous centres; that of animal life consisting in the brain, and that of organic life in the ganglia; and remarks that it is anatomically incorrect, since the spinal nerves have ganglia. Yet at page 12 of his large work it is admitted that "the semi-lunar ganglion and the solar plexus being parts of this system, and the branches of nerves extending and diminishing from this region, give countenance to the idea that we have here the centre of the sympathetic system," an idea "countenanced by the fact, that these viscera perform functions the most independent of the will and over which the mind has no control." It follows, from the extracts, on which we have commented, that even Mr Bell is forced to acknowledge, that the sympathetic presides over some of the involuntary functions, and is the agent of the organic sympathies; and that as this nerve is independent of the sensorium, and endowed with a peculiar sensibility, (for that it possesses some *must* be allowed, though he has denied it,) the theory of Bichat and Reil is not as destitute of foundation as he chooses to affirm.

The question at present before us may, we think, be stated and decided in the following manner. The sympathetic, considered as a whole, is nervous; therefore it generates or transmits nervous influence. It is different from other nerves in its organization, and in its mode of acting when placed under the influence of stimuli. Its mode of life then is different from that of the other nerves; consequently it must furnish a nervous force different from that supplied by the other nerves. It supplies parts having few if any other nerves; consequently those parts

are under a nervous influence different from that by which other parts are animated. These parts are entrusted with the performance of peculiar functions, and as all functions require for their performance nervous action, it follows, that the parts to which we allude must derive the peculiarity of their functions, not only from the peculiarity of their organization, but from the quality of the nervous action imparted to them; finally, the functions of the parts in question are not under the *direct* control of the cerebro-spinal centre, therefore it is probable that the system from which they derive their nervous energy is itself not under the *direct* control of that common centre.

It will be unnecessary to undertake an elaborate enumeration of all the circumstances that might be brought forward in confirmation of the doctrine of Bichat, relative to the sole agency of the sympathetic system in the functions of nutritive life, and, in consequence, to the isolation of these from the life of relation. Such an attempt would force us to extend this article beyond our prescribed limits, lead us into many and useless repetitions, and make us anticipate what we have to say on the subject when on the functions separately. Besides, it will be easily seen, that all the facts and arguments we offered when speaking of the functions of the ganglia—particularly the fact of foetal life continuing, although the child be deprived of brain and spinal marrow—will apply to the functions of the sympathetic, considered as a whole; whether we admit this system to be completely independent, or only so to a certain degree; for in the latter case the nervous energy or power derived from the spinal marrow must, before being transmitted to the viscera and becoming subservient to their functions, undergo a great modification in the ganglionic system, and be mixed up with, or reinforced by, that evolved in the latter.

Although we are disposed to contend with Bichat and other writers of the same school, that the nervous system of organic life—the great sympathetic, is independent of the other system of nerves, and of the centre of volition, owing to its being itself a focus of innervation, or to the ganglia breaking the force of, and modifying the nervous action passing from the spinal marrow to the ganglia and plexuses, and vice versa, we acknowledge, as we have already stated, what in fact every one

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must acknowledge, that there exists a communication between the two systems, without which many of the phenomena observed in health, as well as in a diseased state of the system, could not admit of a ready explanation. Thus the branches of the sympathetic penetrate with the arteries into all the tissues, and must necessarily intermix with the cerebral and spinal nerves which supply these parts. This is particularly shown to be the case in the larynx, pharynx, bronchiæ, lungs, stomach and genital organs, where the filaments of the sympathetic mix with the eighth, ninth and lumbar nerves. It unites, besides, by means of small filaments with all the spinal ganglions, and passes, together with the arteries, into the substance of the brain and spinal marrow. Nature seems, indeed, to have been careful in multiplying these anatomical connexions of the visceral nerves with the cerebro-spinal centres and cords, in order to ensure the reciprocal influence of these parts, and thus guard against their *perfect* isolation, which, had it existed, would have prevented the establishment of that harmony of action, so requisite between all parts of the body, and have proved very soon fatal to the individual.

In disease some of the acts of life being set out in bolder relief than during the normal play of the functions, this reciprocal influence becomes much more conspicuous—for example, irritations of the splanchnic nerves occasion effects on the brain and spinal marrow, which, reacting and producing a reversion of stimulation on the muscular apparatus of animal life, give rise to partial or general convulsions. On the other hand, inflammatory or simple irritations of the brain, intense passions of the mind, which may be called *disease*, derange often the functions of the heart, stomach, intestines and secretory organs. In such instances the ganglia have not offered a sufficiently powerful barrier to the stimulation, which consequently has traversed them and spread to the other system of nerves. On no other principle are we able to explain, in cases of acute gastro-intestinal or hepatic irritation, the symptoms of cerebral or cerebro-spinal irritation which supervene in the course of the disease; and in chronic cases, the phenomena of hypochondriasis which frequently result from nervous and slow inflammatory affections of the viscera; the effect of worms in the intestines in producing nervous complaints;

apoplexy, and other cerebral disease from the use of indigestible food or chronic gastro-enteritis. A thousand other examples of the same kind might be cited; but the preceding will be sufficient for the present.

But in such cases,—even in those in which this reciprocity of influence between the two portions of the nervous system is most manifest,—whether in health, for the exercise of a function, or in a diseased condition of the system, the effects produced are placed beyond the controul of the will. Every one knows that a passion of the mind will occasion palpitation of the heart—a superabundant secretion of bile or of urine,—vomiting,—intestinal evacuations, &c., but it is impossible by the simple operation of volition to cause these phenomena.

We are well aware that against the view of the nature and functions of the sympathetic which we here advocate, it may be urged, that when we investigate the phenomena which take place in the lower order of living beings, we discover that impressionability and motility under the influence of the excitation of fluids, vital affinity, or the chemical forces properly so called—in other words, the power of attraction existing in solid organic molecules, or in the fluids of the body, as well as the inherent action of the cellular and vascular tissues, derived from their proper irritability, would, strictly speaking, appear to suffice for the accomplishment of the phenomena of life, without the concurrence of a system analogous to the nervous system;—that plants, as we are told, have a real circulatory movement, a respiratory oxygenation, exhalations, absorptions, secretions, nutritions, assimilations, in a word, a primary mode of existence, although nothing similar to nerves or ganglia have been discovered in them;—and that from this it has been inferred, by some physiologists, that the ganglia and nerves are not indispensably necessary to the accomplishment of the essential phenomena of nutritive life,—to the fundamental acts of circulation, respiration, secretion, and assimilation.

But we are not sure that these inferences are correct; 1. Because it is not proved that plants are destitute of nervous matter. *M. Dutrochet*, as our readers will find by referring to the sixth volume of this Journal, *M. Brachet* and others, contend for the existence of nervous matter in vegetables; the latter endeavouring to show that every living body possesses

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at least a ganglionic system or its equivalent; and 2. Because, supposing that plants are really deprived of nerves, we are not prepared to regard all those fundamental operations of life in the two classes of living bodies—plants and animals—as precisely the same, and produced by exactly the same mechanism. But even granting that the facts assumed, and the inferences drawn from them, are correct, might we not be allowed to look to other circumstances for forming an idea of the functions of the nervous system, and particularly of that portion of it which has received the denomination of organic? This requires explanation.

Physiologists have very properly remarked, that while the plant receives all the materials of its growth and ultimate development from the soil in which its germs have been deposited; that while in it local action alone is necessary for the prehension of these germs; the animal, on the contrary, is forced to move in order to seize the objects required for the gratification of his wants. Some of the phenomena of life, nutrition for example, may, it is true, still be independent in their essence of the nervous system; but their preparatory acts appear in animals to be submitted to peculiar determinations, and the life of the individual is, in a great measure, submitted to the controul of his own arbitrary will.

Moreover, the transportation,—the conveyance of the products of the secretions, and of the nutritive materials, differ essentially in the two classes; the phenomena of the excretions are more complicated in the animal than in the plant. Circulation in the former is not limited to that of white or lymphatic fluids, which alone can be compared to that of the sap in the latter; it has for its object the transmission to all parts of the system of a distinct fluid from which the materials of nutrition are derived. It is no longer a simple movement of transportation, effected by the force of capillarity and motility of vessels excited simply by the presence or contact of the fluids. So far from this, it requires for its accomplishment the agency of a central organ, and of a particular set of vessels, by which an impulse is given to the fluids,—an impulse, indeed, requiring a higher degree of energy in the exercise of the power of motility, which, in its turn, cannot be brought into play without a more powerful cause of excitation than

could be furnished by the simple action of the fluids on the irritability inherent in the organ. In animals also the faculty of receiving impressions, of being apprised of the contact of various external bodies, in order to select those that are necessary, and reject all such as are detrimental to the system; the power of reacting against these impressions, of transferring their effects to parts distant from those in which they were received, of bringing into play various and distant parts for the accomplishment of certain ends, of uniting into a homogeneous whole, the various elements of the body;—the power, in the more elevated classes, of reflecting on the wants of the system, and exerting the will and judgment in the execution of the movements necessary for their gratification,—all these become requisite for the full accomplishment of the phenomena of life. From all these circumstances arise the necessity of new means and new forces in the economy, and as a natural consequence, of a distinct organic apparatus. The animal, in fact, is endowed with a distinct mode of life which renders certain acts that, though of a secondary kind, are not less indispensable to the maintenance of his existence, necessary to the performance of the functions;—which acts have required the introduction of an additional apparatus. This apparatus, which varies in complexity in the various classes, according to the complexity of their organization, has received from anatomists the name of *nervous*.

Without stopping to inquire into the organic structure or the topographical anatomy of this system in the various classes of animals—without examining whether, in the lower orders it is homogeneous in its organization and general in its influence over all the functions of the body,—subjects which would be foreign from our present object, it will be sufficient to remark, that in man, and in other animals of the superior classes, the nervous system is complex in its organization and functions; that some of the acts of the economy appear to be entrusted to a particular portion of that system, the centres of which are the brain and spinal marrow;—that these place those acts more or less under the influence of the will, and endow the animal with perceptible sensations. But there are other acts upon which these centres and their cords exert only an indirect, if any, influence,—over which volition

has no empire,—the organs entrusted with the performance of which are supplied principally by filaments from another set of nerves,—having but an indirect communication with the centres of the former set, is somewhat peculiar in its organization and textural properties, and of which, until a comparatively short time, nothing very definite was known. From the difference existing between these acts and those submitted to the power of volition; from the absence of nerves of the cerebro-spinal system in organs entrusted with their performance, and their supply from the other set, it was natural to refer those acts to the agency of the latter; admitting, however, that for the harmony, so requisite between all the functions of the economy,—without which all individuality would cease, and a disunion of action in the different members of a whole would ensue and prove detrimental to the regular play of life, a communication, an accord, is established by means of those filaments which, as we have seen, while speaking of the topographical anatomy and origin of this nerve, (we allude of course to the sympathetic), it sends off to join the spinal nerves and the sensorial organs. This is acting agreeably to the method of exclusion; the first step being to show, that the cerebro-spinal centres and their nerves have certain specific functions to perform; that they exercise only a secondary influence over the organs of internal life and the functions of nutrition, circulation, &c.; that as these organs receive nerves from a different system, having but a secondary communication with the cerebro-spinal system, and which is the principal focus of its own vital power, they must be under the especial influence of those nerves. This method, when combined with the experimental method and with the proofs derived from anatomy and pathology, must, we should suppose, be sufficient to render the views of Bichat and Reil highly plausible.

It may be urged, also, that in the lower orders of animals the functions of nutrition are performed, though the ganglia and their cords are shown to belong to the spinal system of nerves. We admit that this objection appears to have some weight; and we have even gone so far as to maintain, that in the present conflicting state of opinion respecting the nature of these ganglia and filaments, the argument founded on their presence in lower animals, by Bichat and his followers, should be abandoned.

But if we have agreed to give up that point on account of the difficulty of proving the nervous system in question to be analogous to the ganglionic of the higher orders of animals, we think it is but fair that those who advocate a different view of the subject, should also cease to adduce the presence of these ganglia and filaments, which they regard as of a different nature from the sympathetic system, as proofs that this system is not the one charged with the functions of organic life. 1. Because they have not proved that these nerves do *not* belong to the sympathetic system, any more than others have proved that they *do* belong to it. 2. Because in the animals occupying the lowest grade in the scale of animalization, the functions are so simple, that the same system of nervous globules may be supposed adequate to preside over them all. 3. Because in some of a higher order nothing but filaments without centres are found, and it would be difficult to decide whether some of these do not belong to a different class of nerves from the others. 4. Because in those in which ganglia are found we cannot be certain that, even admitting these to belong to the spinal system, some nervous matter of a different kind does not exist, though it cannot be distinguished from the other.

It has been urged by those physiologists who advocate the spinal origin of the sympathetic as a peculiarity of the organs supplied with its filaments, that they derive their power of action from (we would say, are influenced by) every part of the spinal marrow; whereas, other portions of the body are only animated by that point of the cord from which they receive their nerves. This circumstance, we believe, was first pointed out by Le Gallois, who explained by it the intensity of the power of the former, (but particularly of the heart, to which he had reference in his experiments;) the uninterrupted continuance of their action from the time of conception to that of death, and their independence of volition; while the functions of the latter are under the controul of the will, are temporary, and can only be renewed after complete intermissions of greater or less duration. This distinction, as will be readily seen, divides very nearly the same organs as those referred by Bichat to one or other of his lives, but evidently rests upon a very different basis from that assumed by the latter, since the organs included in

the organic life, which in Bichat's doctrine are considered as independent of the brain and spinal marrow, are precisely those which, according to Le Gallois, receive from them the most powerful influence—the only difference of these results from those of ordinary effects of volition depending on the vastness of the origin of the nerves of involuntary motion, and the requisite influence of the whole spinal centre. The opinion of M. Le Gallois was founded upon the results of his experiments on the spinal marrow; the action of organs supplied with spinal nerves being arrested by the destruction of that part of the cord from which these nerves originated; whereas, an interruption to the functions of organs supplied with ganglionic nerves was only obtained when the whole marrow was destroyed.

The experiments of Dr Wilson Philip led to conclusions somewhat different from those of Le Gallois. After maintaining that the powers of the heart, of the vessels of circulation and of secretion, and of the peristaltic motion of the stomach and intestines, are all independent both of the brain and spinal marrow, and to be referred to their irritability or to the mechanism of the muscular fibre itself; he adds, that these organs, as well as the voluntary muscles, are capable of being influenced through the nervous system, (*Inquiry*, 257); that the ganglions are secondary centres of nervous influence, whose nerves are as extensively distributed as those which proceed from the brain and spinal marrow, (*Inquiry*, 257, 264,) and that the ganglions are the means by which the influence of every part of the brain and spinal marrow is bestowed on the parts which we find influenced by every part of these organs. At page 264 of his *Inquiry* he states, that the two sets of muscles of voluntary and involuntary motion "are equally capable of being excited by the nervous influence; but while this influence is the sole stimulus to which the muscles of voluntary motion are subject, it acts only occasionally on the muscles of involuntary motion, which are excited in all their usual actions of stimuli independent of it, and consequently of the will. When the latter muscles are excited by the nervous influence, it is not applied to them in the same way as to the muscles of voluntary motion, to which it is sent directly from the brain and spinal marrow, each muscle receiving the

nervous influence from a particular part of these organs; while to the muscles of involuntary motion, it is sent through the great chain of ganglions, each muscle receiving its nervous influence from every part of the brain and spinal marrow. In a paper subsequently read before the Royal Society, and published in the Philosophical Transactions, in the London Medical Gazette (vol. v, p. 487, &c.), and for a third time in his late work on acute and chronic diseases, Dr Philip has presented his views respecting the functions of the ganglionic nerves in a condensed form. He concludes from all his experiments, that the ganglionic system is destined to establish a general communication between the parts of the body it supplies with nerves and *all* the others, as well as to favour the reception, by those parts, of stimuli, from all parts of the brain and spinal marrow;—a circumstance which, as we have seen, does not hold in reference to parts supplied with cerebro-spinal nerves, as these receive the influence of only one portion of the spinal marrow or brain, and convey their impressions to only one portion of the body. This circumstance he attributes to the perpetual intertwining of the nerves of that system, effected not only by its ganglia and plexuses, but also by the very free anastomoses of its filaments.

Dr P. very properly remarks, that the partial connexion of the organs supplied by cerebral and spinal nerves, with the nervous system, and the universal connexion with that system of those supplied by the ganglionic nerves, explain many of the phenomena, both of health and disease. Why, he asks, are affections of the stomach and other important organs felt instantly through every part of the frame, while those of a voluntary muscle, or even of an organ of sense, although often possessed of great sensibility, is confined to the injured part? If the eye or ear, or the muscle of a limb, be so deranged, by a sudden blow, for example, as instantly to destroy its power, the senses of sight, or hearing, or the voluntary power of the part is lost, and there the evil ends, unless inflammation ensues; but a blow on the stomach, which instantly destroys its power, at the same moment destroys that of every other part. It is not difficult to answer the question, since the state of the stomach, from the cause just pointed out, may influence every part of the nervous system.

These remarks, and the experiments which have elicited them, are certainly highly interesting in a physiological and pathological point of view; but we must confess, that they do not appear to us to justify the conclusion to which the two distinguished physiologists we have named have arrived. All, it appears to us, that we can fairly gather from Le Gallois and Philip's experiments is, that the brain and spinal marrow, throughout their whole extent, exert an influence over the vital organs. To this opinion we are led by the consideration of some facts which may be collected in the writings of Dr Philip himself, and of other experimenters, as well as by the nature and results of some of Le Gallois's experiments. If the vital organs really received their nervous power exclusively from the spinal marrow, as contended for by Le Gallois, we should find that this power would be annihilated by the destruction of that system; and such, indeed, is precisely what Le Gallois maintains on the strength of his experiments. But independently of the facts already mentioned, and which might be cited to exemplify the continuance of action in vital organs, although no influence from the spinal marrow could be supposed to be furnished,—we allude to anencephalus fœtuses, we may allow some importance to the circumstance, that in M. Le Gallois's experiments the sudden destruction of the spinal marrow must have occasioned, in consequence of the disruption of that reciprocal influence which the two nervous systems furnish to each other, and which we have said is necessary to the free operations of life, so violent a shock to the functions of the vital organs, as to occasion the sudden death of the animal. In the case of fœtuses without brain or spinal marrow, on the contrary, the destruction takes place slowly, and the vital organs become so gradually accustomed to the change as not to be affected by it. Do we not see this, every day, in various forms of disease? Does not a sudden and violent morbid impression on the spinal marrow or brain occasion a correspondingly violent effect on the vital organs,—pectoral and abdominal; while, in chronic diseases of those parts, even when these diseases have occasioned disorganization, little or no change in the rhythm of the vital functions is produced? Do we not find this difference of effects in the influence of other organs on each other, when suddenly or slowly affected? Le Gallois himself, as Professor Lallemand judiciously remarks,

has found that by destroying the spinal marrow slowly, and by small portions at a time, and by allowing some time to intervene between each operation, he could destroy a greater mass of it without producing death, than when he destroyed the whole of it suddenly. But independently of this, the spinal ganglia—the tract of nervous matter which gives rise to the nerves of sensation—that from which the nerves of voluntary motion arise, and the lateral columns connected with the office of respiration must all have been destroyed (Charles Bell). To this must be added that M. Le Gallois and Dr Philip found that the cervical portion of the spinal marrow, the whole of that organ, and even the brain itself, might be destroyed, without apparently affecting the action of the heart, provided artificial respiration were maintained—that Mr Clift states, that in his experiments on the carp, the action of the heart continued long after the brain and spinal marrow had been destroyed, and that Dr Philip found the capillary circulation and the muscular action of the stomach and intestines to continue unimpaired for some time, the former in a frog's web, the latter in a rabbit, after the destruction of the spinal marrow or brain, or both conjoined.

A due consideration of all these facts and arguments will serve to convince us, that the ganglionic system, though influenced in some measure by all parts of the cerebro-spinal system, is yet, for all that regards its agency over the regular functions of the vital organ, and particularly in the foetal state, when the harmony of action between the two portions of the nervous system does not exist, and is not in fact necessary, independent of the cerebro-spinal centres; and consequently, that when the influence of the latter is exerted, it must be regarded as something additional,—super-added and, strictly speaking, unnecessary to the regular play of the vital functions.

This article has reached already to such an unexpected extent, that we are forced to stop somewhat abruptly, and to leave unnoticed many points connected with the physiology of the ganglionic system. In some future number we may find an opportunity to resume the subject, and investigate the agency of the sympathetic in the production or maintenance of the vital functions separately,—circulation, respiration,

nutrition; in the production of the sympathies; its influence over the exercise of the sensorial faculties; in the production of animal heat, &c. On many of these points much of interest may be said, and much will be found contained in Professor Lobstein's and M. Brachet's valuable works.

In termination, we may be allowed to hazard a few suggestions: 1. If it be true that the sympathetic must be considered as a distinct and independent system of nerves, we naturally conclude that it possesses a *centre*, as the nerves of animal life possess one in the brain and spinal marrow; for it would in all probability be going too far to admit with Bichat that *each* ganglion must be viewed in that light. But even in admitting that each ganglion serves as a focus of nervous power, and a receptacle of sensations of its appropriate organ, yet we must suppose that it maintains its connexion with, and its dependence upon, the rest of the same system. Dr Miller has well remarked, that "one ganglionic circle may be thrown into commotion by the presence of unaccustomed objects, without imparting either its knowledge or disorder to any other." This is exemplified by the action of a cause interrupting the functional action of an organ, without immediately or materially affecting others. The same results take place in experiments on the ganglia. But it is not less true that the affection of a ganglion, whether produced by a common cause or by the experimentalist, will soon occasion disorder in all the others.

2. If each ganglion cannot be considered as a distinct and independent centre;—if there is a common centre to the sympathetic system, where are we to look for it? If we may be allowed an opinion on the subject, we would say, that the great mass of ganglia and nervous anastomoses, denominated semilunar ganglia and solar plexus, should be considered as at least the principal centre, and that the other ganglia found in different parts should be held only as subsidiary centres. Our reasons for this opinion are founded on the facts mentioned above, and which, as we have seen, induced Mr Bell to adopt the same views on the subject. They need not, therefore, be recapitulated here. By a reference to the 5th volume of this Journal, p. 435, our readers will perceive that M. Jules Arthaud, of Paris, struck with the results of the dissection of the spleen,

performed in 1817 by Mr Strauz, and in which this naturalist found that organ filled with a pulpy substance in all respects similar to the nervous pulp, and following up the idea of the same gentleman, that "the spleen was a nervous plexus, dependent upon the ganglionic system of the viscera," that M. A. we say, instituted a series of experiments, from the results of which he has come to conclusions very similar to the foregoing. In the 6th volume of the same work it will further be seen, that Dr Miller, of Baltimore, likewise considers the spleen as the "source or centre, or great secreting gland" of the ganglionic system. Upon these views we have already expressed an opinion, and do not intend, therefore, to enlarge in this place. We merely refer, for their development, to the volumes already mentioned, and to Dr Miller's late publication.

3. As the ganglionic system has a centre, it must follow, that, whenever a sensation is received by one or more twigs of this system, the impression is necessarily transmitted to that centre before any general effect can be obtained. Now if, in consequence of this sensation, the cerebro-spinal centres become in any way implicated, experience pain, or are called upon for certain acts either normal or abnormal—this effect can have been produced in only one of the three following ways: 1st, the nerves of organic life, in which irritation has been reflected by the ganglionic centre, have communicated it to the nerves of animal life, with which they anastomose in the organs, and which, in their turn, have conveyed it to the brain. 2d, the stimulation has been communicated directly to the cerebro-spinal centres by the ganglionic nerves, which, as we have seen, dip into these centres, either along with the arteries or with the nerves of sensation, and there convey the commands of the ganglionic centre. 3d, the irritation is received in the organic centre itself by nerves of animal life, and is transmitted by these to their own centres.

4. It is plain that the reverse may take place through the same agencies, when the impression is transmitted *to*, instead of *from*, the ganglionic centre. In that case the impression must be conveyed to the centre of the ganglia by the sympathetic nerves themselves, or by branches of the system of animal life. This latter is easily accounted for in the upper

cavities, or in the upper part of the abdominal cavity. But in the lower portion of the latter how are we to explain this transmission? It cannot be effected by the branches connecting the ganglia of these parts with the spinal marrow, and which we have described, since these, in all probability, go *to*, and do not come *from*, this medulla; besides, they join cords which are principally composed of nerves of sensation. To account for the phenomenon we must have recourse to the common ganglionic centre, which, like the cerebro-spinal centres, becomes the reservoir of all impressions transmitted from these centres, and reflects them to various parts under its dependence; or else, if we must admit a direct agency of the spinal marrow on vital organs which do not receive nerves of animal life coming from the upper part of that centre, we are forced to suppose that it furnishes twigs which have as yet escaped the researches of anatomists.

5. It is probable that the nerves of the sympathetic, like the nerves of animal life, are of the two orders,—of sensation and of motion, since movements of the organic kind are produced in parts unprovided, at least so far as we can ascertain, with cerebral or spinal nerves, or which do not appear to require the intervention of the brain or spinal marrow, and of course of the nerves that issue from or proceed to these,—which, indeed, are influenced only in a secondary manner by their diseases or their destruction, and have been known to occur in cases in which these centres did not exist. This idea has been defended with considerable ability by M. Guérin de Mamers in France, and by Dr Miller of Baltimore.*

* Dr Miller is Professor of the Institutes and Practice of Medicine in the Washington Medical College at Baltimore. He has favoured the profession with his views on the subject of the sympathetic, and on other points, in several appendices and notes inserted in a reprint of Dr Philip's recent work on acute and chronic diseases, which appeared lately at Baltimore. While we take pleasure in acknowledging our obligations to a talented countryman for contributing his share towards the elucidation of some of the most obscure points of physiology, we cannot help expressing the regret we experienced in perceiving the tone of confidence with which the claim to originality respecting those views has been made by Dr Miller. In his preface, the doctor announces that he owes nothing to Bichat, Hewson, Home, &c. &c. except for the corroboration of his previous conceptions—a fact which, he asserts, could be proved by the order of time;—nay, he goes so far as to maintain that his *views are so entirely different from*

ART. XI.—GANGRENE OF THE MOUTHS OF CHILDREN.

Der Wasserkrebs der Kinder; von Dr A. L. RICHTER, Arzt des Friedrich-Wilhelm-Med. Chirurg. Instituts. Staats-arzt, &c. 8vo. Berlin, 1828.

Beobachtungen und Bemerkungen über den Wasserkrebs; vom Dr C. C. HUETER, Gehülfsarzte bei der Chirurgischen abtheilung des Land Krankenhauses zu Marburg. 8vo. Berlin, 1829.

By the term *wasserkrebs*, or aqueous cancer, the German writers designate that peculiar affection of the mouths of children, terminating rapidly in extensive sloughing of the gums and cheeks, and not unfrequently in necrosis, also, of a considerable portion of the maxillary bones. The attention of American physicians was first especially directed to this disease by Dr Benjamin H. Coates, in a paper published in the third number, volume second, of this Journal, presenting a very interesting account of the gangrenous ulcer of the mouth, as it occurred in the Children's Asylum of Phi-

those of all others in their most marked features, that he trusts he will not be taxed with dependency upon any extrinsic aid. With respect to that part of the claim to originality which relates to the great sympathetic, on which we are inclined to think Dr Miller attaches the greatest importance, we must be allowed to remark, that it is totally unfounded, since his views, and almost all the details and arguments upon which they are founded, will be found contained in Bichat's General Anatomy. Dr Miller remarks, that "the innovations in the principles of medicine, to which he lays claim, are the results of experiments, observations, and reflection, begun more than twenty years ago." Now, Bichat's work was published in 1801, consequently 30 years ago, and ten before Dr Miller made his discoveries, or at least began the experiments, &c. which led to those discoveries. If to this it is added, that Bichat's reputation certainly entitled him twenty years ago to a careful perusal from all who aspired to the rank of an innovator;—that in fact he was not the first, as we have shown, to regard the ganglionic as an independent system of nerves, and the ganglia as distinct centres of nervous action, we shall be able to arrive at a just estimate of Dr Miller's pretensions to originality. Dr Miller would have acted more wisely had he reprinted Bichat's chapter on the subject, and added a few notes in explanation of his own views on points in which he differs from the French physiologist.

As regards his notions respecting the nature and functions of the spleen, we have stated in the text that he has been anticipated on the subject some years

Philadelphia, and the treatment which was there found most effectual in arresting its progress.

The gangrene of the mouth, when we consider the insidious manner of its attack, the rapidity of its progress, and its very great mortality, when neglected or mismanaged, must be ranked among the most formidable of those diseases which occur during the period of infancy. It is one, the pathology of which demands a much closer and more extended investigation than it has yet received.

The disease is happily one of comparatively unfrequent occurrence in this country. In Europe, however, it would appear to prevail to a very considerable extent, especially in the hospitals destined for the reception of infants, among the children of the poorer classes, and in low, damp, and otherwise unhealthy districts. According to Thomassen and Thysen, two Dutch writers, who have recently published accounts of the gangrene of the mouth of children, it occurs frequently as an epidemic in the Netherlands, after various eruptive and gastric diseases.

The first accurate account we have of this affection is that of Battus, contained in his *Manual of Surgery*, published at Amsterdam, in 1620. He denominates it *water-kanker*. Subsequently mention is made of the disease by many of the older medical writers of Holland, France and Germany, and it is described with some minuteness in the more recent treatises of Hildenbrand, Girtanner, Fleisch, Feiler, Henke Jörg, and Reimann, on the diseases of children. But the facts

ago by several French physiologists. Here again, therefore, his claims to originality is unfounded.

We cannot terminate this note without alluding to one more point connected with Dr Miller's views on the subject of the sympathetic. Dr M. states, that "so far from the spinal nerves sending branches to the sympathetic, those two kinds of nerves, in the intercostal course, do not unite." This is incorrect, for we have always found, even since reading the above lines, that the sympathetic *does* unite with the intercostal nerves, and becomes, so far as we can perceive, confounded with them. This is a point on which, indeed, the most respectable anatomists agree.

We are happy to state that Manec's splendid lithographic plate of the sympathetic has been copied by Mr Ancora, a distinguished drawing master of this city, and published by Mr Dobson, No. 108, Chestnut Street. We regard it as the finest anatomical plate of the kind we have ever seen, and as such recommend it to all who wish to form a correct idea of the anatomy of this nerve.

which these writers present in relation to the disease, are so few and imperfect, and in many respects so contradictory, that nothing certain can be deduced from them in relation to its actual pathology. Notwithstanding the gangrene of the mouth of children is a disease of very common occurrence in different parts of England and Ireland, it has elicited but little attention from the physicians of these countries. With the exception of the imperfect notices contained in the works of Boot, Simmonds, Pearson, Underwood, Parr, Burns, and S. Cooper, there is scarcely a medical writer of Great Britain by whom any mention whatever is made of the disease. We must except, however, that variety of it denominated by Dr Jackson, of Northumberland county, Pennsylvania, *gangrænopsis**, which is very accurately described by Mr Dease, of Dublin, in his treatise on the diseases of lying-in women.

Recently, however, the attention of the French and German writers, particularly the latter, has been directed to the disease under consideration, and we may shortly expect, as the result of their labours, a more accurate knowledge of its nature and treatment than we now possess. Within a few years four dissertations on the gangrene of the mouth have been published in Germany by Drs Z. Reiman, W. J. Weigand, A. L. Richter, and C. C. Hueter. By the first of these gentlemen the term cancer is very properly rejected; he proposes to substitute the denomination, "*highly acute pulpy or caseous gangrene*." The treatise of Dr Richter, the title of which is placed at the head of this article, presents a very excellent view of the present state of our knowledge in regard to the causes, symptoms, pathology and treatment of the disease; we propose, therefore, to lay before our readers a very full analysis of the most interesting portions of its contents, with the addition of such remarks as may suggest themselves from the result of our own experience.

The opinions of Dr Hueter will also be noticed in the course of the review.

According to Dr Richter, the general symptoms by which the gangrene of the mouth is accompanied, have a close resemblance to those proper to the disease described by the

* See Medical Recorder, Vol. XII. page 66.

older writers, under the name of *stomatocace*, of which he conceives the present disease to be in fact a mere variety. The affection of the mouth is preceded, for a longer or shorter time, by a series of symptoms more or less numerous, and differing in some degree according to the cause by which it has been produced. In the cases which have fallen under our notice, the disease of the mouth occurred invariably in individuals who had laboured for a considerable time under symptoms referable to gastro-intestinal irritation; the irregular intermittent fever of one class of physicians, and the *febris verminosa* of another. The local affection commences by an intumescence of the salivary glands, and by an increased secretion of saliva, which becomes changed in its properties, being more fluid, sanious, and of a fetid odour, and during the night especially, runs in a stream from the mouth. The odour exhaled by the saliva resembles very strongly that which results from a profuse mercurial salivation. When the gangrene commences in the gums, these become at first tumid, then assume a livid hue, and separate themselves from the teeth, which readily move in their sockets, and are covered with a grayish mucus. On different parts of the gums, and on the mucous membrane, as it passes from them to the lips, small ash coloured spots make their appearance; these soon become of a deeper colour, and form ulcers, the bottoms of which are of a grayish brown. The ulcers augment rapidly in size, laying bare the alveolar process, and even a portion of the maxillary bone. The teeth fall out, and not unfrequently considerable portions of dead bone are detached. The destruction of the soft parts extends to the lips and cheeks, not however by a process of ulceration—large portions becoming at once affected with gangrene, sometimes dry and at others humid. The parts swell, assume rapidly a grayish or black colour, and separating, deprive the mouth not unfrequently of the greater part of its parietes.

In other cases the disease appears under a different form, commencing in the lips or in their immediate neighbourhood. These parts swell to an enormous extent, particularly at the point where the gangrene first occurs. This portion becomes hard, and no longer yields to the pressure of the finger; the skin assumes a smooth shining appearance; its temperature

is augmented, and it has a slight degree of redness, which disappears gradually at its circumference. In a few days a round livid or grayish spot makes its appearance on the part where the tumefaction is the greatest; it increases in size with great rapidity, and is surrounded by a red border accurately circumscribed. This spot very soon becomes black, and in the space of from three to six days the gangrene, in general, extends itself to the greater part of the face, and destroys by its effects the life of the patient. When by an energetic and appropriate treatment, the progress of the mortification is arrested, the dead portions separate, and the parts affected heal more or less promptly.

Dr Richter divides the gangrene of the mouth, according to the difference of its causes and progress, into three distinct species:

1. The scorbutic (*cancer aquaticus scorbuticus—noma scorbutica—stomacace gangrænosa infantum scorbutica*);
2. The gastric (*cancer aquaticus gastricus—noma gastrica—stomacace gangrænosa infantum gastrica*); and
3. The metastatic (*cancer aquaticus metastaticus, noma metastatica—stomacace gangrænosa infantum metastatica*).

The first, or scorbutic species, is, according to our author, by far the most frequent; to it he conceives should be referred all the cases which have occurred endemically in the orphan asylums, or epidemically in situations bordering upon the sea.

The invasion of the disease is slow, and it is in general preceded by a series of debilitating causes, or of some affection by which the organic energies of the system have been impaired. The precursory symptoms are a general debility, listlessness, indisposition to engage in play, or even to move about; the little patient cries frequently, is discontented, and desires to sleep, without the ability. The countenance is pale and dejected, and a puckering of the cheeks about the corners of the mouth is observed. The child becomes emaciated, and is subject to nocturnal sweats; it has no appetite for food, but in general experiences an increase of thirst. This state of things having continued from eight days to two weeks, the local disease makes its appearance. The patient complains of sharp pains in its mouth and gums; fetor of the breath soon manifests itself, accompanied with an increased secretion

of saliva; a sense of itching or pricking, and heat, is experienced in the gums, which assume a dark red hue, become tumid, and bleed upon the slightest touch. The salivation augments rapidly, accompanied generally with a slight discharge of blood; the salivary glands at the same time become tumid and painful. The appearance of the disease at this stage has a very marked similarity with the affection of the mouth resulting from a mercurial impression, and we have known even experienced physicians to confound it with the latter.

When the local disease is allowed to progress, the periosteum of the gums separate from the roots of the teeth; these become loose, and are covered with a coating of mucus of a dirty white colour. Frequently they fall out of their sockets. It is at this period that fever generally occurs, at first in the latter part of the day, and accompanied with an increase of the night sweats; diarrhoea, also, is not unfrequent. The disease may continue in this state for many weeks, or even months, as Drs Wépfer and Coates have remarked. Most generally, however, in a few days either actual gangrene or gangrenous ulcerations make their appearance. The gums become covered with vesicles of an ash colour, which rapidly enlarge, unite together, and rupturing, show the gums beneath to be black and gangrenous. When ulcerations occur, they present edges slightly inflamed, elevated, uneven, and irregularly circumscribed; their surface is of a gray or rather greenish colour, and rough. When the black or gangrenous portions of the gums separate, an ulcer similar in form to the slough is left, which assumes immediately a gangrenous appearance. The gangrene extends itself very rapidly, laying bare the alveola and inferior maxillary bone. The teeth fall out, and portions of dead bone are thrown off, should the little sufferer not sink under the disease at an earlier period. From the gums the gangrene is propagated to the lips, cheeks, and other soft parts of the face, which become more and more swollen as the disease progresses. This intumescence presents all the appearances of asthenia. At this stage of the disease, and sometimes previously, there is a difficulty in moving the lower jaw, in consequence of which the mouth becomes firmly closed. This Reimann has erroneously considered a

tetanic affection; it, however, evidently arises merely from the swelling of the soft parts, and the pain produced by any effort to move the jaw. Upon the mucous membrane of the mouth one or more grayish spots make their appearance, and in a few hours change into ulcers that present the same characters as those already described, and occasion invariably a great loss of substance. In from three to seven days the mortification will frequently extend itself to the whole of the soft parts surrounding the mouth, which exhale a cadaverous odour, and discharge a putrid sanies. The fever, which now augments in intensity, assumes a nervous or hectic character, and the child dies, generally about the eighth, or at the latest on the fourteenth day after the commencement of the gangrene, its body presenting all the indications of a general colliquation.

The next species of the gangrene of the mouth, or the gastric, is, according to Dr Richter, very rarely met with. He conceives, however, that many of the cases reported by Boot, Lund, A. G. Richter, Cullen, and other authors, were of this kind. It is marked by the following symptoms: The appetite is lost, or it is augmented, and continues so to the death of the patient; the tongue is coated, but aphthæ are seldom present. The general system is not affected as in the former species, and the disease attracts but little attention until the gangrene has commenced. The patients preserve until then their accustomed gaiety, play about, and present, in fact, no symptoms from which the approach of so serious a disease as the gangrene of the mouth could be anticipated. The occurrence of this form of the malady is in general sudden; the patient becomes all at once agitated and peevish, and is affected with slight accessions of fever, especially if the intumescence of the face has already commenced. These symptoms are in general accompanied with a sense of uneasiness, nausea, vomiting, diarrhœa, or constipation. The mortification does not commence at the gums, but attacks first one of the cheeks, the commissure of the lips, or the mucous membrane of these parts, from whence it extends, in many instances, when the affection arrives at its height, to the gums and to the bones. The local affection commences in the cheek; this becomes swollen, hard, red, and shining; an increased secretion of saliva takes place, and there is exhaled

from the mouth a peculiar and highly offensive odour. On examining the internal surface of the affected cheek, one or more small ill looking vesicles are perceived, which after some days rupture and form a malignant ulcer of a dirty gray colour. This augments rapidly in size, having a rounded form, with red, distinctly circumscribed edges. This ulceration is not always immediately detected, and occasionally it is entirely overlooked, in consequence of the attention of those about the child being fixed entirely upon the external swelling of the cheek, as well as from the little patient being unable, in consequence of the swelling, to open his mouth to any extent. Even the slight excoriation or fracture of the skin, which often occurs at one of the angles of the mouth, will not lead an individual unaccustomed to the disease to suspect the existence of a formidable gangrene on the inner surface of the cheek, at least not until the former has become changed, as is generally the case, into an ulcer with a dirty gray surface, or into a dark brown pustule, surrounded with a red areola, distinctly circumscribed. When gangrene has commenced in the mucous membrane of the cheek, and the consequent ulceration becomes deeper and more extended, there occurs on the external surface, where the tumefaction is the greatest, a livid spot, surrounded by a red areola; this soon becomes of a darker colour, and increasing in size, extends, finally, in the course of from four to eight days, to the lips, nose, and surrounding parts. Portions of it are soft and of a gray or greenish hue, and present all the characters of humid gangrene, while other parts are completely mumified, hard, and of a deep black. On examining the mouth, the gums are found to be destroyed only in that part opposite to where the gangrene in the cheek had commenced, the teeth there being loose, while the rest of the gums are to all appearance entirely unaffected. The gangrene of the gums in this species of the disease may be considered, therefore, as a consequence of the previous mortification of the cheek, whereas, in the former species, the gums are invariably the part at which the gangrene commences, the jaw being frequently destroyed previously to the cheek being affected. When, however, the gangrene of the mouth has arrived to its highest pitch, it is impossible to discover any difference between the present and preceding species of the disease,

the whole of the mouth and its parieties being equally affected in both. In the progress of the disease, the general functions of the system become more and more affected; the appetite is entirely destroyed; the thirst augments; the symptoms of gastric disorder augment in intensity; the diarrhœa becomes more copious, and the abdomen is distended with gas; the debility of the patient rapidly increases, while the intellectual functions remain unaffected even to the last. The fever assumes finally a nervous character; the little sufferer falls into a soporose condition; symptoms of universal colliquation now manifest themselves, and death occurs.

The form of the disease now described is that treated of by our countryman Dr Jackson under the denomination of *gangrænopsis*, and it is the one which has occurred the most frequently in our own practice. The phenomena of the disease, as described by Dr Richter, are precisely those which we have observed in the cases that have fallen under our notice, with the exception that in place of the disease occurring suddenly, or without any very manifest precursory symptoms, as remarked by him, it has always been subsequently to some affection of the stomach and bowels, attended with febrile symptoms of an intermittent or remittent type. In no instance, also, have we known the gangrene to attack the lips, or even the whole thickness of the cheek; we were enabled in every case to arrest its progress before it had extended itself beyond the mucous membrane lining the cheek on which it first occurred and a small extent of the gums in the immediate neighbourhood. It is probable, however, that the cases which we have been called upon to treat were, even in their earlier stages, of a much milder character than those to which the author refers.

The third species of the gangrene of the mouth, the *metastatic*, is, according to Dr R., next to the scorbutic, of the most frequent occurrence. It succeeds ordinarily to the acute diseases of the skin, as small pox, measles, scarlatina, &c. where these have not run regularly through their several stages, or have been suddenly arrested during their evolution. This form of the disease commences in general abruptly, and without being preceded by any particular symptoms from which its occurrence can be anticipated. In every instance, however, the little patient is in a state of more

or less debility—produced by the preceding disease. The gangrene commences in the soft parts surrounding the mouth. There is, in general, first perceived, a hard indolent tumour about the size of an almond, deeply seated, and attended by a slight degree of redness of the skin by which it is covered. Upon examining the mouth nothing unusual is to be discovered. Within two or three days the tumour increases in volume, and the skin externally becomes of a deeper red; the internal surface of the cheek assumes a gangrenous appearance, while an extremely offensive odour is exhaled from the mouth. The local affection is attended with exacerbations of fever towards evening; the appetite of the little patient is seldom much affected. The external circumscribed redness of the cheek becomes in a short time paler, livid, and then of a grayish hue, and surrounded by a red areola, which extends itself as the disease progresses. The gray sphacelated portion becomes frequently in a few hours completely black. If the gums be now examined, it will be found that in the immediate neighbourhood of that part of the cheek at which the disease commenced they are in a state of gangrene; the teeth here soon become loose, and finally fall out of their sockets. This affection of the gums is very often, as in the scorbutic species, secondary to that of the cheek, and does not occur until a considerable portion of the latter and of the lips are in a state of mortification. When the disease attacks the lips, a red spot occurs upon some part of their lining membrane; this becomes by degrees of a deeper colour, then livid, and in a very short period completely gangrenous. Death, the most ordinary termination of this species of the disease, speedily occurs, and hence necrosis of the maxillary bones is rarely observed. As the local affection progresses the general powers of the system sink, a colliquative condition presents itself, and the patient expires without exhibiting any symptoms of a nervous character.

Dr Richter states that within a very recent period he has had occasion to observe a much milder species of the disease, which occurred after an attack of rubeola that had run an irregular course. In this child gangrenous spots, varying in size, of a dark brown colour, and surrounded with a red margin, presented themselves upon the lips near to their angles, as well as upon the cheeks; the general system of the

patient remaining apparently unaffected. These gangrenous patches, which had been preceded for about forty-eight hours by a redness of the parts at which they occurred, appeared to be confined entirely to the skin, for after the sloughs separated there was little loss of substance. A suppuration of a favourable character immediately commenced, followed by granulations and cicatrization. At a single point, however, the right commissure of the lips, the ulceration formed by the separation of the slough was of a greater depth, the whole thickness of the lip being here affected with gangrene: the small opening which resulted was nevertheless quickly closed, the loss of substance being supplied by abundant granulations.

The attempt to establish here any parallel between the peculiar affection under consideration and the destruction of the lips and cheeks by scrofulous, herpetic and syphilitic ulcerations, Dr Richter considers superfluous: the destruction of these parts in the latter cases never resulting, as in the former, from gangrene, but from a genuine process of ulceration, while, also, the existence of the phenomena peculiar to the disease giving rise to these ulcerations are always sufficient to point out their peculiar character.

The gangrene of the internal surface of the cheek, which constitutes, as we have seen, Dr Richter's second species of the gangrene of the mouth, and which has been recently very ably described by M. Guersent, under the denomination of *membranous inflammation of the cheek**, would appear to us to differ in many respects from the gangrenous affection of the mouth commencing in the gums, and hence there is a propriety in describing it as a distinct species. We see no necessity, however, for Dr R.'s third species, the metastatic, which differs from the former merely in the circumstance of the local affection following an eruptive disease. Against the name metastatic, which is founded in what is conceived to be an erroneous pathology, we must be allowed strongly to protest.

As to the exact nature of the local affection of the mouth under consideration, and the cause of its invariable and rapid termination in gangrene, and its general mortality, there still exists much obscurity. Within the short period during which

* See the last number of this Journal, page 215.

the disease has elicited the attention of the profession, a number of opinions and hypotheses, differing widely from each other, have been advanced in relation to these points. The principal of these are examined and rejected by Dr Richter. The opinion, however, which deserves the most attention, principally from the talents and respectability of its advocates, is that which has been advanced recently by Drs Klaatsch and C. G. Hesse. These authors consider that what has been viewed as a gangrenous destruction of the gums and of the soft parts surrounding the mouth, is to be attributed to a decomposition of these parts perfectly analogous to what takes place in the softening of the stomach, uterus and other organs, and which is independent on, and unconnected entirely with, gangrene. This hypothesis is strongly combated by Dr Richter, who maintains that the disease is a simple mortification resulting from a preceding inflammation of the parts in which it is seated, of an asthenic character. He supports his opinion by the following arguments.

1. The fetor exhaled from the mouth during the whole continuance of the disease. This symptom, remarks Dr R., is never observed in cases of softening, properly so termed, of any one of the organs. It cannot exist, because the softening is characterized, not by a chemical decomposition, but in consequence of the tissues of the affected part being reduced to a less complex state of organization. We cannot conceive that the development of the fetid odour can be produced simply by the action of the atmospheric air upon the softened tissue. Without wishing to adopt the opinion which is here contested, we would merely remark that a fetid exhalation, arising from a gangrenous condition of the mucous membrane of the uterus, is very generally, if not always, present in cases of softening occurring in that organ.

2. That the disease is not a simple softening, Dr R. conceives to be proved by its being preceded, for a short period, by an intumescence of the parts affected, of an asthenic inflammatory character, which has been considered by the most skillful practitioners to be the most certain indication of the speedy occurrence of the gangrene of the mouth. Inflammation is not developed after the gangrene has commenced as a *conamen naturæ*—an effort of the parts to resist destruction, as Dr Hesse has supposed; on the contrary, it always precedes

for several days their death. Besides, it yet remains a question to be decided, whether the gelatinous softening of parts may not be the result of inflammation.

3. The organic condition of the parts destroyed by the disease, and the manner in which the destruction commences and spreads, are, according to our author, proofs of its gangrenous character. The phenomena upon which our diagnosis is founded are, he conceives, too characteristic of gangrene to permit us to refer them to any other cause, and especially to simple softening.

4. Dr Richter conceives that the necrosis by which the maxillary bones frequently become affected in this disease, when it has commenced in the gums, or when spreading from the lips or cheeks it attacks the soft parts in immediate contact with the bones, occasioning large portions of them to separate, and the teeth to fall out, can only be explained by supposing the bony structure to participate in the disease of the soft parts, and to become like them destroyed by gangrene.

If the destruction of the soft parts were the effect simply of a gelatinous softening, the bones participating in this condition should likewise present, to a greater or less degree, a similar softening. This argument does not appear to us, however, one of great force. A bone may certainly become necrosed in consequence of disorganization of the soft parts by which it is surrounded, including its periosteum, from whatever cause this disorganization may arise. The death of a bone is not conclusive evidence that the destruction of the soft parts enveloping it has been the result of gangrene.

5. Dr Richter maintains that the disease of the mouth is gangrenous, from the fact, that the sphacelated portions of the gums, cheek and lips are surrounded by a distinct line of demarcation, or a border of a deep red colour, which changes to yellow in those cases in which the dead parts separate, and suppuration of the edges takes place. This, he remarks, never occurs excepting in cases of gangrene; it is observed in no other species of destruction to which the soft parts are liable.

The foregoing arguments are considered by Dr Richter as sufficient to disprove those advanced by Drs Klaatsch and Hesse in favour of the identity between the disease of the mouth under consideration and the gelatinous softening and putrescence

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he uterus, drawn from the circumstance of these two species of disorganization occurring during infancy; the slight affection of the general system by which they are accompanied, compared with the serious character of the local affection, both affecting parts in the neighbourhood of natural orifices, or rather parts which have a very great similarity in their organization, &c. These circumstances Dr R. considers merely as accidental, and from which no evidence can be drawn in proof that the two diseases have the same pathological character.

Our author is of opinion that the malignant nature of the gangrene of the mouth in children is to be explained principally from the peculiarity of the infantile organization. As we have remarked in the commencement of this article, Dr Richter considers the disease to be merely a variety of the disease of the gums known to the older physicians under the name of stomacace, from which it differs only in the early commencement of gangrene and its rapid extension to the surrounding parts. It is rare, he remarks, that the stomacace presents itself in this aggravated and alarming form, even in infants. It has frequently occurred epidemically, affecting at the same time a great number of infants as well as adults, without in these epidemics the gangrene of the mouth presenting itself in a single instance; which he considers a conclusive evidence that the state of the atmosphere is insufficient of itself to give to the disease the peculiar malignancy which forms the distinguishing character of the affection we are considering.

Dr Heuter, however, contends that the gangrene of the mouth is a distinct disease from the stomacace. The latter term has generally been employed to designate a disease of the gums and mucous membrane of the mouth, in which the former are tumid, livid, and covered with superficial ulcerations. Should several of these ulcers unite, and become gangrenous, destroying the soft parts and the bone itself, the disease would then assume a character identical, it is true, in some respects with that of the gangrene of the mouth; but even then the slowness of its progress would indicate that it is still a different disease. Dr Heuter is not aware, however, of a single instance in which the character above indicated has been as-

sumed by the stomacace. I am well aware, he adds, that the gangrene of the mouth commences sometimes on the internal surface of the cheek, the entire thickness of which latter is often destroyed by it, so that occasionally the exact nature of the case is often overlooked until a gangrenous slough is formed on the outside of the cheek. But in these cases the gums are not affected until after the complete destruction of the soft parts, and sometimes remain healthy notwithstanding the gangrenous condition of the surrounding tissues. This, he conceives, proves that gangrene of the mouth is an affection entirely different from that termed stomacace, in which an affection of the gums is a primary and leading phenomenon.

In those cases in which gangrene of the mouth succeeds to intermittent fever, Dr Heuter conceives it rational to suppose that both diseases are the effect of the same morbid cause acting upon the system. The affection of the mouth being probably determined by the predisposition to disease in the gums of children, owing to the irritation of teething. This irritation, he remarks, which occurs with the first dentition, and is again induced by the appearance of the second set of teeth, may predispose to gangrene of the mouth when the system is placed under the influence of any morbid cause; the gangrene having considerable analogy to that of the toes in old people, with this difference, however, that the former takes place at a period of life when, and in parts where, the powers of reproduction are very active, the gangrene being the result of a sur-irritation, whereas the mortification of the toes in old age is the result of a defect of action and of nutrition.

The views of this gentleman in regard to the pathology of gangrene of the mouth appear, however, to be very confused and unsettled, for, in another part of his essay, he contends for the retention of the German appellation of the disease, aqueous cancer; maintaining that this points out its proper character, there being no doubt in his mind that the cancer of the lips in adults and the gangrene of the mouth in children are one and the same affection. For the reasons he adduces for this, we must refer to the essay itself; to us they appear, however, weak, and altogether inconclusive.

The patients in whom the gangrene of the mouth has been

observed are, according to Dr Richter, invariably young children of a very delicate constitution, of a scrofulous diathesis, with soft and flaccid muscles, pale skin and light hair, and in whom, very generally, the functions of assimilation and nutrition have been depressed from a series of causes more or less prejudicial to health. Under such circumstances, the occurrence of stomacace being induced by the debilitating agents to which the children have been subjected, we need not be surprised at the speedy occurrence of gangrene, and the formation of gangrenous ulcers in the interior of the mouth. The inflammation, of a highly asthenic character, by which the disease is preceded, the early formation of patches of a pale and livid colour, and the rapidity with which the gangrene extends itself, all sufficiently indicate the extreme debility of the parts in which the destruction of life takes place. In adults the malady seldom runs on to the same extent as in children, because in the former the system possesses sufficient energy to resist the destructive influence of the debilitating causes to which it is exposed.

The examinations of the bodies of those patients who have been destroyed by the gangrene of the mouth are too few in number, and have been performed with too little accuracy, to furnish any facts calculated to throw light upon the nature of the disease. So far as our own observations go, which, however, have been very limited, the internal organs, especially the stomach, intestines and liver, have presented indications of inflammation of a more or less chronic character. Dr Anderson, physician to the children's asylum of this city, informs us that in the fatal cases of the disease, where he has been enabled to examine by dissection the bodies of the patients after death, he has detected very considerable enlargement and hardening of the mesenteric glands, a scrofulous condition of the glands of the neck, and in every instance a diseased condition of the lungs. In general, the substance of these organs were thickly studded with tubercles in various stages of inflammation and suppuration.

Is the disease contagious? To this question no satisfactory reply can be given. Under certain circumstances, and during particular seasons, a number of infants, similarly exposed, have been affected with it simultaneously or in rapid

succession; it is evident, therefore, that the disease may occur as an endemic or even as an epidemic; but whether it be communicated in any instance from one individual to another, we have too few well authenticated facts positively to determine. In every case, however, as a prudent precaution, it will be proper to separate as much as possible the individuals affected from those in health, as well as from each other; a number of patients labouring under gangrene of the mouth being confined in the same room cannot fail, even with every precaution in regard to cleanliness and ventilation, to render the disease, to a certain extent, more unmanageable than when the patients are placed each in a separate apartment.

In regard to the predisposing causes of the gangrene of the mouth, these are considered by Dr R., to be common with nearly every writer who has treated upon the disease, to be the period of infancy, a lax and delicate constitution, and exposure to the influence of various debilitating agents. By a reference to all the observations on record, it will be found that in no instance whatever has the disease presented itself in children of a robust and healthy constitution. Although in some species of gangrene of the mouth the general health of the little patient is but little affected, and notwithstanding the disease occasionally occurs suddenly, yet, in every instance it will be found that the health and strength of those affected have been previously undermined by the influence of various debilitating causes. We seldom find the gangrene of the mouth to occur excepting among the children of the poorest classes; never in the children of those who enjoy, to a sufficient extent, the comforts of life, and to whose nursing a proper degree of attention has been paid. The causes which are enumerated as those favouring the production of this disease are, insufficient or unwholesome food, the use of immoderate quantities of cheese, of salted aliments, of bacon, fish, &c. The influence of a damp or impure atmosphere, or that rendered impure by a number of persons crowded in small, low, and ill-ventilated apartments. Personal and domestic filth. Want of sufficient exercise, and various chronic diseases. As the children of those who live on the borders of the sea are exposed at one and the same time to many of these causes, the gangrene of the mouth is an affection extremely prevalent

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in Holland, Sweden, and many parts of England. The influence of long continued exposure to a damp climate, and the constant use of unwholesome food in the production of this disease, are sufficiently established by the report of the physicians attached to the French army which occupied Spain; they having had frequently to treat a gangrenous inflammation of the mouth which occurred among the soldiers, and which received from the Spaniards the name of *fegar* or *fegarite*. Those physicians, also, who have the charge of the poor in large cities met with many cases of the disease every year. In Berlin, according to Dr R., it is seldom that the annual bills of mortality do not contain several deaths from this affection. In the hospitals destined for the reception of children, gangrene of the mouth frequently occurs as an epidemic; in the children's asylum of Philadelphia, Dr Coates remarks that at one period, among the two hundred and forty inmates of the institution, seventy were affected with the disease. Various fevers, whether verminose, intermittent, or mucous, remarks Dr R., which in consequence of their duration and their malignancy are succeeded by a great prostration of the patient's strength, may not only cause a stomacae to assume the gangrenous character, but may also, considered as an imperfect crisis, be the sole cause by which the gangrene of the mouth is induced. All of these causes are considered to act with the greatest intensity when the children exposed to them are of a lax and delicate constitution, with a pale skin and light coloured hair; such also sink the most readily under it, as their systems possess too little energy to enable them to resist effectually the extension of the gangrenous affection.

Gangrene of the mouth is in fact almost entirely confined to the period of childhood. It occurs most commonly at some period between the first and tenth year, but especially between the second and fourth. Seldom, if ever, has a case of this disease been observed in infants during the period of suckling. Fischer, it is true, cites one case which occurred in an infant of nine months, but he does not inform us whether the little patient was weaned, or still nourished by the milk of its parent. The very rare occurrence of the disease in adults is to be attributed, Dr R. presumes, to the greater degree of vital energy possessed by the constitution, and the

greater firmness of fibre, in consequence of which more resistance is presented to the influence of the debilitating cause by which the disease is produced. We do not possess sufficient data to enable us to determine which of the two sexes is most liable to be affected with it.

Dr Richter places among the most ordinary and fruitful of the remote causes of gangrene of the mouth a scorbutic affection occurring during infancy. In those countries particularly exposed to a humid state of the atmosphere, and where the gangrene of the mouth is most frequently met with, as for instance Poland, Denmark, Norway, Sweden, England, Scotland; as well as in situations along the borders of the sea, and in those which from any cause are exposed to occasional inundations, or to a superabundance of moisture, the scurvy is a disease of ordinary occurrence; it reigns there as it were epidemically, particularly among such of the inhabitants as live principally upon salted provisions, or those of an unwholesome or innutritious quality. Sea fish, the fat and oily part of birds, cheese, bad bread, constitute articles of food, particularly when eaten without a sufficient amount of fresh vegetables of a wholesome kind, peculiarly pernicious during childhood, and when at this age the diet is composed almost exclusively of them, they induce in the system a morbid condition; more especially when at the same time it is exposed to the influence of other deleterious causes, as an impure and humid atmosphere, confinement in small and filthy apartments, an inactive life, &c. Hence an improper diet is to be ranked among the predisposing causes of the disease of which we are treating.

Gangrene of the mouth is no doubt in a majority of cases dependent upon gastric irritation. The causes which we have already enumerated act in its production by disturbing the healthy condition of the stomach and other organs appropriated to digestion and assimilation. The apthous ulcerations of the mouth of children, which have in many respects so close a resemblance with those of a syphilitic origin, are always, according to Dr R., the consequence of a morbid condition of the digestive function. When these ulcers, in infants of a feeble and delicate habit, assume a gangrenous aspect, they become in fact genuine cases of gangrene of the mouth,

notwithstanding the general condition of the system may present no indications from which the near approach of so serious and fatal an affection could be anticipated. As another fruitful source of the disease Dr R. enumerates the previous existence of febrile diseases, especially the exanthematic: an imperfect crisis, or the sudden suppression (metastasis) of the affection of the skin would appear, he remarks, to favour in an especial manner the development of the gangrene of the mouth. So frequently has it been observed to occur after the acute eruptions, that the circumstance cannot with propriety be considered as merely accidental.

Diseases of a catarrhal and rheumatic character, which so commonly precede the appearance of a mild stomacace, may, according to Dr R., be regarded as causes capable of imparting to this disease a more malignant character, and in causing it to pass rapidly into a state of gangrene, particularly if at the same time the patient has been exposed to the influence of debilitating agents.

It is probable that in addition to the above, more extended and accurate observations will discover other causes by which under certain circumstances the gangrene of the mouth may be induced.

We have given above the account presented by Dr Richter, of the nature and causes of this affection; this accords tolerably well with the phenomena of the disease, and the circumstances under which it has occurred within our own notice, and is in conformity with the opinions of the majority of those who have within the few past years presented us with an account of their observations and experience in relation to it. From the older writers little satisfactory can be learned as to its pathology. Bidloo, who formed his opinion from the symptoms of three cases only, attributes it to the inflammation of a diseased lymphatic vessel, while most of the others consider it merely as a species of scurvy. The principal authors of a modern date who differ from Dr R. as to the nature of the disease, are Klaatsch and Hesse, whose views we have already noticed. These views are also adopted by Weigand, in his Dissertation published at Marbourg in 1827, while Lentin, a Swedish physician, has denominated the disease *cheilocace*, or scrofulous tumour of the lips.

Dr Ch. F. Fischer, who deserves great credit from being

among the first writers who directed in a particular manner the attention of the profession in Europe to this affection, endeavours to point out the relation which exists between it, the erysipelas of new born infants, and the induration of the cellular tissue, occurring at the same period. He reports four cases, two of which occurred subsequently to measles, the third after an attack of fever of an asthenic character, and the fourth after a scorbutic affection. All these cases terminated fatally. He concludes that the disease is caused by an induration of the cellular tissue, resulting from asthenic inflammation, attended by infiltration. Dr Seibert, who has traced the diagnosis of the gangrene of the mouth with much skill, considers it to be a different disease from the affection of the mouth denominated stomacace. He conceives that a scorbutic tendency in the system is absolutely necessary to the production of the gangrene, but that the scorbutic character is only fully developed in consequence of the reaction which takes place in the system when the local affection has reached its acme, and hence it is very frequently taken for the effect of the former rather than its cause.

In treating of the diagnosis of the gangrene of the mouth, Dr Richter remarks, that every physician who has had an opportunity of seeing the disease, agrees that it is one which, if not entirely beyond the control of medical treatment, speedily produces, in at least the majority of instances, the death of the patient. By the fifth, or at furthest, the fourteenth day from its invasion, the patient ordinarily sinks under the state of exhaustion which then suddenly occurs; a circumstance which has excited the surprise of all; the general health of the system being so little impaired that to those unacquainted with the disease such a termination would scarcely have been anticipated. Our own experience does not accord with this statement of our author; we have not found the disease so unmanageable as he, in common with others, has reported. We have very generally, as we have already stated, been enabled to arrest speedily the progress of the gangrene, and of the many patients affected with the disease which have fallen under our care, have lost but few. This is also the experience of Dr Coates, as related in the paper referred to in the commencement of this article, as well as of Dr Anderson, the present physician to the children's asylum in

this city, where frequent cases of the disease occur, and of which few terminate fatally*. We can readily believe that when the real character of the disease is misunderstood; when it is overlooked in its first stages, or treated by inert or improper remedies; its termination will very generally be fatal. It is important, therefore, that the physician should be perfectly aware of the circumstances under which this affection of the mouth ordinarily occurs; that he should, when these are present, make frequent examinations of the mouths of the children placed under his care, and on the slightest appearance of disease prevent its further progress by the remedies which have been found most successful in its management.

It is yet difficult to determine with certainty, observes Dr Richter, why this affection terminates so generally in death. The remark of M. Berthe that there still exists great uncertainty as to the proper mode of managing the disease, deserves particular attention; but this uncertainty cannot be viewed as the only cause of its general mortality. Neither, likewise, is the age of the patient, nor the extent of the mortification, sufficient to explain its fatality. We see patients from the earliest to the latest periods of infancy die from the gangrene of the mouth, while others recover after the destruction of a considerable extent of the soft parts, or even the death of large portions of bone. Saviard states that he lost every patient affected with the disease under seven years of age; the observations of others prove, however, the contrary. The same may be said in regard to the treatment; means of the most

* The following statement will show the mortality which has attended this disease in the institution under the care of this gentleman, for a period of nearly three years. It is copied from the register kept in the house.

From June 1st to January 1st 1828 there occurred thirteen cases of gangrene of the mouth, of these *two* died.

From January 1st 1828 to January 1st 1829, there occurred thirteen cases, of these *three* died. Appended to the annual report for this year is the following statement by the resident student of the house: "One child only died from this affection unconnected with other diseases."

From January 1st 1829 to January 1st 1830, there occurred six cases of gangrene of the mouth and two of gangrene of the ear; this latter is an extremely rare disease, these being the only cases that appear from the register to have occurred in the institution. In the annual report of this year it is stated that no death has occurred from gangrene of the mouth as a primary disease.

diverse character have been employed with success in some instances, whilst in others they have failed. The period, however, when the treatment is commenced has been fully proved to be an all important circumstance to insure its success; this, perhaps, more than any other will determine, in the majority of cases, its greater or less mortality. When the physician has been enabled once to determine the period of development, and the subsequent progress of the local disease, he will very generally be enabled to direct his remedies so as effectually to arrest its course and to save the life of his patient, provided he is called in sufficiently early. This is proved by our own experience and that of Dr Coates.

Muys, Lund, Seibert, Klaatsch and Reimann assert, that they very generally succeeded in curing the gangrene of the mouth when it commenced by a tumour in the cheek, or by a livid spot.

The causes by which the gangrene is produced would appear also to have not a little influence upon its favourable or unfavourable termination. It requires, however, more extended observations to arrive at any positive conclusions as to this point. When gangrene of the mouth occurs subsequently to affections of the stomach, it would appear to Dr Richter to be of a less malignant character than when it succeeds to fever or diseases of the skin in individuals of a scorbutic habit. The disease is also peculiarly destructive to life when it occurs as an endemic. In the hospitals destined to the reception of children, and the asylums of orphans, when the disease makes its appearance, it very generally terminates fatally, at least in Europe.

In children who are constantly exposed to the influence of causes injurious to health, gangrene of the mouth is very seldom recovered from.

Numerous cases are undoubtedly reported by different physicians in which the disease terminated favourably, even though in some the destruction of the soft parts about the mouth has been very extensive, and at the same time portions of the maxillary bones have been lost by necrosis. It is nevertheless true, that whenever the gangrene is of any extent there is little to be hoped for, the recovery of the patient being a rare occurrence; the restoration of the parts destroyed always de-

manding a degree of vital energy which does not always exist in the delicate and enfeebled system of the little sufferer.

The chapter in the treatise of Dr R. which is devoted to a consideration of the treatment of gangrene of the mouth is the least satisfactory portion of the work. It contains chiefly an enumeration of the various and discordant remedies which have been proposed by different physicians. We are presented with no satisfactory comparison of their effects, nor of their relative efficacy.

The administration of internal remedies would appear to have in general interfered but little with the progress of the disease, and in no degree have they tended to arrest its fatal termination. In fact the remedies which have been usually employed we might expect, *à priori*, from their nature and the period of the disease at which they were had recourse to, to be little calculated to remove the condition of the system upon which the occurrence of the local gangrene depends, or in any degree to prevent its rapid spread. Those which have been the most warmly recommended are the antiscorbutics, various tonics and purgatives. Boerhaave, the first English writer who has given any account of the disease, directs a drink composed of sarsaparilla and other vegetable substances, in great repute during the period in which he wrote, as purifiers of the blood. Van Lil recommends barley water acidulated with lemon juice. Bruinemann, Bernstein and Wendt, the sulphuric acid diluted with honey. Meza attributes a decided efficacy to the spirit of cochlearia, combined with honey, &c. The chief remedy, however, which has been depended on is cinchona, either alone or combined with other tonics, or with the sulphuric or muriatic acid—while a few authors declare that they have succeeded in curing the disease by purgatives and emetics. "The antiscorbutics," remarks Dr Richter, "possess in general properties of too little activity to render them of any advantage in gangrene of the mouth. The sulphuric acid alone, or in combination with the bark, produces in general no effect, unless received into a healthy stomach and properly digested. In the scorbutic variety of the disease the muriatic acid is too debilitating." The phosphoric acid, the juice of the lemon with beer, Rhenish wine and sugar, are, he conceives, remedies better adapted to the case, and agree better with the stomach; they are to be

viewed, however, only as accessory means, having little influence upon the progress of the gangrene. But when by appropriate local applications the extension of the disease has been arrested, in every form of the complaint the administration of those preparations of the bark the most readily digested, as the infusion, the extract prepared without heat, the sulphate of quinia, &c. becomes indispensable in order to support the strength of the patient, and to enable his system to sustain the efforts necessary to the restoration of the parts which have been destroyed by the disease. At the same time a light and nutritious diet should be directed. So far we believe the directions of the author to be highly judicious; but when he remarks that in every species of gangrene of the mouth the employment of vomits and purgatives will *frequently* be of advantage, we must beg leave entirely to differ from him. If instances do occur in which these remedies are appropriate, they must be extremely rare; we have never met with them: on the contrary, the cases of the disease which have fallen under our notice were all accompanied by well marked symptoms of irritation of the stomach and bowels, and after the gangrene had occurred, with so much debility in the general system, that emetics or purgatives could not fail to have been in the highest degree injurious.

The remedies which have been employed externally with the view of arresting the disease are very numerous. All of them are reported to have been successful in the hands of some physicians, while in those of others they have entirely failed. An enumeration of the principal of them may not be useless or uninteresting.

Unguentum Egypticum.—This ointment, made by boiling together verdigris, honey and vinegar, was a great favourite with Boot and others, as a local application in gangrene of the mouth. The former employed it mixed with equal portions of the syrup of mulberries, the diseased portions of the mouth being first washed with a solution of alum in wine. Boot informs us that by the use of these remedies he obtained a cure in three cases, notwithstanding the gangrene in one of them had made so frightful a progress that it destroyed a portion of the jaw and ten teeth. Van de Voorde directs the same ointment in combination with a vinous decoction of scordium,

absinthium, scabiosa, agrimony, the flowers of the lesser centaury and St John's wort, to which were also added spirits of wine and the muriate of soda. Mays employed likewise the Egyptian ointment in combination with gum lac, ammoniac, the spirit of cochlearia, and a slight addition of alcohol.

Gargles.—A gargle composed of the roots of the aristolochia and the Florentine iris, with agrimony, hoarhound and other herba, infused in white wine, with the addition of myrrh and aloes, is extolled by Van de Voorde; while Boot directs a gargle made from a decoction of chervil, cinquefoil, myrrh, rose leaves, sage and white vitriol. Savaird was accustomed to wash the mouth with spirits of wine, in which a certain quantity of camphor, alum and sugar was dissolved; or with a decoction in wine of pomegranate peel, rose leaves and sumach. During the existence of inflammation Van Swieten directs the mouth to be washed with a solution of the muriate of ammonia and nitrate of potash, with the addition of vinegar or lemon juice, and during a later period of the disease with the spirit of cochlearia and theriac. Van Lil recommends as a gargle a mixture composed of a solution of the muriate of ammonia, gum lac, myrrh, spirit of cochlearia and honey of roses, and subsequently of a decoction of wild roses, with the tincture of myrrh and honey of roses. By recent physicians these gargles are seldom employed; they have little effect upon the progress of the disease, and their proper use is always attended with difficulty.

Astringent washes.—Symmonds employed as a wash to the diseased parts a mixture of port wine and tincture of myrrh. F. Wendt, an infusion of aromatics and arnica, with vinegar and camphorated spirits. Rey, the tincture and decoction of Peruvian bark, with the solution of camphor in alcohol. Pearson, calcined alum, with a decoction of bark and the sulphate of zinc, tincture of myrrh, lime water and alcohol. Under the head of astringent washes, Dr Richter notices the use of a strong solution of the sulphate of copper as recommended by Dr Coates; in his general summing up, however, of the local treatment best adapted to the disease, as we shall presently see, he does not include this wash among his list of remedies. It is one, nevertheless, which presses itself strongly upon the attention of the profession. In the great majority of cases in

which we have employed it, it has succeeded in very speedily arresting the extension and progress of the mortification; while under its use, the gangrenous ulcerations, whether seated in the gums, lips, or cheek, have assumed rapidly a more healthy appearance; and this in many instances in which the disease has been allowed to run on until it has assumed a highly aggravated form.

Sulphuric acid.—Van de Voorde appears to have been the first by whom this remedy was employed in the disease before us. He considered it as more efficient than all the local applications previously in use. He applied it mixed with honey, and asserts that he has found it successful in the most desperate cases. Since his period, the effects of the sulphuric acid have been highly extolled by numerous writers. Van de Weil employed it successfully in conjunction with the Egyptian ointment and the honey of roses. Jourdain combined this acid, diluted, with camphor, muriate of ammonia, honey of roses and alcohol. He relates two cases in which this mixture was successful. Instances are also related by Bruinemann and Courcelles, in which the application of the acid alone produced a cure.

Muriatic acid.—The local application of this acid is stated by many writers to have been found efficacious in the cure of gangrene of the mouth. Van Swieten, upon the recommendation of Poupert, employed it by adding twenty drops of the acid to half an ounce of honey; with a pencil dipped in this mixture he touched the parts affected with the disease. When the case was one of a more aggravated character, the acid alone was used. Invariably he found the extension of the gangrene to be arrested, and the dead portions to separate in a short time. Stelwagen succeeded in curing one case, although a secondary attack, by a mixture of the muriatic acid, extract of cicuta, and the tinctures of myrrh and contrayerva, while in two other cases no advantage was derived from its employment. Siebert, from the good effects he obtained from this acid in five cases, considers it as the most certain remedy for the disease. Bernstein, Richter, Jadelot, Boyer, Isnard-Cévole, Baron and others, recommend it likewise; while Klaatsch and Weigand declare, that from its use they have obtained not the least advantage.

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acid.—Very recently a case has been related by ussen in which the gangrenous portions of the mouth were wet every ten minutes during one night with this acid. In the morning it was found that the extension of the disease was arrested, at the end of the third hour subsequently the sloughs had separated, and the ulcers presented very speedily granulations of a healthy appearance. In two other cases the application of the acid was equally beneficial, but the little patient died in consequence of the occurrence of trismus. In another case in which it was employed by Dr Reimann, the disease was cured. In four days the dead parts separated, and the ulcers went on rapidly to cicatrization. Weigand, however, made trial of the remedy without success. These two instances of failure should not, remarks Dr Richter, prevent a fair trial being given to the acetic acid in gangrene of the mouth, for we well know, few remedies will be found equally beneficial in all cases of any disease. A particular importance should, he conceives, be attached to this acid in the affection under consideration, its empyreumatic nature increasing its antiseptic properties.

Muriate of soda.—This was first recommended as a remedy in gangrene of the mouth by Rey. Two cases are reported in which it was successful. The first was an aggravated case, in which the tincture and decoction of the bark with spirits of camphor had been employed without effect; a pledget of lint, wet with a solution of common salt, was applied to the mouth; the gangrene was arrested; by the sixth day the dead portions separated, and the ulcers were healed in a short period. In the second case the remedy was equally successful. A history of it will be found in the *Annales de la Médecine Physiolog.* t. iii. p. 307.

Peruvian balsam.—A case is related by E. Thompson, in the *London Medical and Physical Journal*, vol. lvii. p. 533, in which a cure was obtained by the local application of this article in conjunction with the internal use of tonics and a generous diet of animal food.

Scarification of the gums.—Boot directs the gums to be scarified to give discharge to the putrid blood. Bidloo introduced into the scarifications a solution of the sulphate of copper, and Saviard sulphuric acid diluted with water. Berthe

has supposed this operation so important to the cure of gangrene of the mouth, that he conceives one of the causes of the mortality of the disease is the great difficulty there exists in properly performing it in children.

Excision of the gangrenous portions.—Van de Vorde directs merely the dead portions to be removed, but Jourdain, Berthe, Acrel and Stelwagen have advised incisions to be made into the surrounding sound parts, so as to remove the whole of the disease when seated in the lips. The latter gentleman proposes then to unite the edges of the wound by means of the hare lip suture, and to wet the dressings which are applied with a decoction of scordium, abrotanum, absinthium and vinegar. By this means he succeeded in one instance in obtaining a cure in a few days, and with little deformity to the patient. Boyer, also, advises the excision of the parts affected with gangrene, and, to arrest the hemorrhage, directs the wound to be covered with a sponge wet with eau de rubel and alum; in an hour or two the sponge to be removed, and the mouth carefully washed with diluted muriatic acid. Few, we suspect, will be inclined to imitate this practice.

The actual cautery.—This was employed by Capdeville, Chopart, and Desault; Lund, however, strongly opposes its use in consequence of its not correcting the corrupted state of the fluids upon which he supposes the disease to depend; while Isnard-Cévole considers the actual cautery to be the only means capable of arresting the progress of the gangrene after it has made its appearance. For, he remarks, by increasing the activity of the capillary tissue, it causes a species of local fever which favours the separation of the dead portions of the lips. Baron states, also, that he has cured the disease by this means.

Lunar caustic.—This remedy, which is spoken of in the highest terms by Guersent, in that form of the disease in which the gangrenous destruction commences on the internal surface of the cheek, has been employed by Dr Anderson, of this city, in all cases of gangrene of the mouth which have occurred in the children's asylum since the first of June 1827. Whenever the local affection is preceded by general febrile symptoms, these are treated by bleeding, purging, low diet, and the free use of diluents; as soon as the disease of the mouth presents itself, the nitrate of silver, either in pencil or

in solution, is applied to the parts affected. When a local inflammation occurs, free and repeated leeching, the application of blisters, poultices, and in some cases, the unguentum sabinæ, this gentleman has found highly beneficial. Until very lately, after the application of the caustic, the parts affected were directed to be wet with the blue wash, as employed by Dr Coates. When so used, it was found, however, to produce a swelling and inflammation of the lips, and of late the caustic alone is applied.

The success of this practice may be judged of by the statement already given of the number of cases which have occurred in the institution, with their results, during the two years and seven months immediately preceding the 1st of January 1830. It is proper to say that the lunar caustic was employed by Dr Coates, but as stated in the paper to which we have referred in the commencement of this review, without any decided advantage. For ourselves, we have never employed the remedy, having always been perfectly satisfied with the effects of the solution of the sulphate of copper; the success, however, which has attended its application in the cases which have occurred of late years in the asylum, presses it strongly upon the attention of the physician.

Having examined all the local remedies which have been proposed for the cure of gangrene of the mouth, Dr Richter concludes, that the local treatment of the disease is that to which most importance is to be attributed. As a local application, he considers that a decided preference should be given to the sulphuric, muriatic and acetic acids, and the muriate of soda. Although he has not been able to convince himself as yet of their good effects, yet from the testimony which has been adduced in their favour, he conceives we have reason to believe that more good may be effected from their use than from that of any other agent. New and more extended facts will be necessary before a decision can be made as to which among them deserves the preference. Dr Heuter likewise believes that the local remedies most to be depended upon are the acids, especially the acetic and muriatic, used in conjunction; while Guersent considers a mixture of muriatic acid and honey to be the very best local remedy in the gangrenous affection of the cheek. It is proper, however, to remark, that the acetic, muriatic, nitric, and sulphuric acids, were fairly tried, as local

applications, by Dr Coates, in cases of gangrene of the mouth; in his hands their effects were by no means, however, so beneficial as they are stated to have been in those of various European physicians.

When the acids are employed, Dr Richter observes, that in every case, in order to obtain from them beneficial effects, their application must be repeated every half hour, or at furthest every hour. They should be applied either by a pencil, or by covering the affected parts with lint moistened with them. Their use should not be discontinued until the gangrene ceases to spread and granulations are formed.

Dr Richter states that he is not prepared to recommend the excision of the diseased portions of the lip, notwithstanding the favourable testimony borne as to the success of the operation, inasmuch as no convincing evidence has been offered to prove the strictly local character of the disease. The actual cautery, however, he considers to be a remedy from which much good may be anticipated, especially in those instances in which the acids fail in arresting the progress of the gangrene, or when the latter invades the whole of the lips and surrounding soft parts. In such aggravated cases the application of the actual cautery should not be confined to the parts already dead, but it should be extended to the live parts with which these are in contact, in order that by exciting in them an increased vital action, the spread of the gangrene may be arrested, and the separation of the sloughs facilitated.

ART. XII.—SOUTHWOOD SMITH ON FEVER.

A Treatise on Fever. By SOUTHWOOD SMITH, M.D., *Physician to the London Fever Hospital.* London printed, 1829. Philadelphia reprinted. Carey and Lea, 1830: pp. 448.

This work bears internal evidence of being the production of a very able man; and as such we shall feel ourselves justified in giving a full analysis of it.

The treatise is divided into chapters, in which the principal points connected with the philosophy of fever are considered; such as the ancient and modern doctrines relative to the nature and seat of fever, its varieties, common phenomena, and the true principle of arrangement applicable to it; its pathology, whether of the solids or fluids; the theory of its nature, deducible from the phenomena; its causes, whether exciting or remote; and lastly, its treatment.

CHAPTER I. *Necessity of a further investigation of Fever. Ancient and modern Doctrines relating to it. Questions to be solved before Fever can be understood. Precise object of investigation, and proper mode of conducting it.*

Dr Smith, on taking charge of the London fever hospital, had his attention particularly directed by the founders of the charity to two points, conceived to be of chief importance; 1st, the accumulation of facts, by which the true nature of fever might be ascertained; and 2ndly, the cautious trial of remedies by which a more sure and successful mode of treatment for the disease might be discovered. Of the zeal and success with which he has performed his arduous office, the reader will have abundant evidence in the account which we are about to give of his labours.

Every candid physician must agree with Dr Smith in admitting the great obscurity which surrounds the subject of fever. The greatest physicians that have ever lived have admitted the difficulty of the investigation; and if they had directed their genius to the establishment of a few facts on a sure basis, on which their successors might have cautiously built, instead of their attempting to erect the entire edifice of fever, a vain attempt for a single individual, we might not now have cause to regret the extreme vagueness and deficiency of our knowledge on this subject.

In the London fever hospital the greatest pains are taken to accumulate accurate facts relative to the cases admitted. Between six and seven hundred patients annually pass through its wards. The symptoms of each case are carefully noted at stated times, and also in the interval, if changes occur; and any case which terminates fatally, is examined after death, and the morbid appearances recorded. It is on observations made in the course of four years, in the manner and on the

number of patients above mentioned, that Dr Smith's work is founded.

The author begins by giving a rapid sketch of the doctrine of fever held by Hippocrates and adopted with amplification by Galen and Sydenham, that it is caused by morbid matter, to expel which the fever is to be considered as the effort of nature. "That conjectures so gratuitous," says Dr Smith, "and so utterly incompatible with the structure and functions of the animal frame, should, at such distant periods of the world, under such different conditions of society, and in such different states of science, so entirely possess and satisfy the minds of three of the most extraordinary men that ever illustrated or extended any department of science, will appear the less wonderful when we consider that the doctrines relative to fever, which displaced and succeeded them, originated in precisely the same error, and vary in their aspect only in conformity to the progressive advancement of general science."

Dr Smith next notices the theory of Cullen, which being more explicit in its language, and intelligible in its nature, caused the then prevalent doctrines of the humoral pathology to be exploded; though it still embraced an important feature of the humoral doctrine, namely, that fever was an effort, if not to expel a morbid humour, at least to correct a morbid action. The author gives the following masterly sketch of this theory:

"Cullen, building upon the foundation laid by Hoffmann, rivalling in the number of his pupils, and exceeding in the brilliancy of his success, if not in the perpetuity of his fame, any name of antiquity, achieved this great revolution; and in opposition to the ancient theories, taught that the first change induced in the animal system, by the operation of the exciting causes of fever, is a diminution of the energy of the brain; that all the powers of the body and all the faculties of the mind, that the functions of sensation and motion, the processes of respiration, circulation, and secretion, all fail or are diminished in the general debility; that after a certain time, a morbid increase of some of these functions, especially of the circulation, takes place, with an augmentation of the heat; that these three states, that of debility, of cold, and of heat, bear to each other the relation of cause and effect; that the first state is the result of the sedative or debilitating influence of contagion, marsh

miasmata, cold, or any other exciting cause, and the subsequent states are the result of the first; that the debility produces all the phenomena of the cold stage, and especially a spasmodic constriction of the extreme arterial vessels; that this spasm or atony of the extreme vessels exists not only on the first attack of the cold stage, but remains during the whole subsequent course of fever; that the spasm of the extreme vessels throws a load of blood on the central parts of the circulating system, which proves a source of irritation to the heart and arteries, and excites them to a greater action; that this increased action, the source of the heat and the other phenomena which constitute the second or hot stage, continues till the spasm is relaxed or overcome; and that this excitement of spasm for the purpose of producing the subsequent reaction is a part of the operation of the *vis medicatrix naturæ*, the innate preserving power of the constitution." P. 26.

Dr Smith considers the theory of fever of Brown to be essentially the same with that of Cullen, both attributing all fever to debility. But, perhaps, there was this difference between their theories, that while Cullen considered the hot stage not perhaps as debility, but the means of nature for overcoming the debility in which spasm consists, Brown considered debility to characterize every stage of the disease.

The author next notices the more recent views of Dr Stoker, Dr Burne, and Dr Clanny. Dr Stoker's opinion in relation to common epidemic fever, that it is never essentially inflammatory, is deemed by Dr Smith to be precisely the Brunonian doctrine of fever, so far as this point is concerned; but Dr Stoker revives the humoral pathology when he asserts that typhus fever is connected with changes which *primarily* take place in the fluids; and Dr Burne expresses the same opinion more broadly, when he states "that the adynamic fever has no local seat; that its nature is *a morbid condition of the blood*, produced by the operation of the primary cause, the respiration of a contaminated or poisoned atmosphere: that this morbid blood, acting on the brain and nervous system, is of itself sufficient in very many instances to bring about the very great derangement and imperfect performance of all the functions of the organic and of the animal life; while great derangement and imperfect performance of all the functions constitute the phenomena of adynamic fever."

Dr Clanny's views are somewhat different. Instead of re-

garding, with Drs Stoker and Burne, a vitiated state of the blood to be the essence of typhoid or adynamic fever, he considers its proximate cause to be a want of power in the system to form blood. Thus it is perceived that in these doctrines of the nature of a large division of fever, an approach is made, in a modified form, to the old doctrines of a humoral pathology.

Dr Smith next notices a widely different and indeed diametrically opposite theory of fever. According to the views of a large and increasing sect, fever is strictly a local disease, having its primary and essential seat in one organ, and consisting in inflammation of that organ. Dr Clutterbuck is then noticed as one of the most distinguished advocates of this opinion, and the following quotation made by Dr Smith from his work is so well expressed that we think we shall be gratifying our readers by giving it in full.

"Fever, in regard to its effects on the system," says Dr Clutterbuck, "is the most general of all diseases, and gives rise during its progress to the greatest variety of symptoms. These, contemplated in the mass, present nothing but confusion. Like all complicated phenomena, they require to be subjected to strict analysis; that their order may be traced, and their relation to each other and to the existing cause shown. To the neglect of this may be ascribed the error, as I conceive it to be, which has been so generally fallen into, of considering fever as a universal disease, or one that affects for the first time the whole system; no one part being supposed to suffer necessarily before the rest. Whereas, when the disease is minutely scrutinized, and its first appearance accurately noticed (which indeed from the slightness and consequent neglect of the first symptoms is rarely done), it will be found to be strictly a *topical* affection, the general disorder of the system being merely *secondary*, or symptomatic of this."

The author next speaks of the similar doctrine of Broussais, and from the order in which their views are presented, we may presume that Dr Smith thinks that Dr Clutterbuck has the priority over Dr Broussais in the distinct enunciation of the pathological principle, that all fevers arise from a local irritation or inflammation. But while there is a perfect accordance of doctrine as to the local origin of this class of diseases, there is a wide discrepancy of opinion as to the particu-

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organ affected. Thus, Dr Clutterbuck thinks that the organ universally affected in every variety of idiopathic fever is the brain. Out of fifty cases, the symptoms of which he noted down with the greatest minuteness, no two were found to correspond in the minute points, though they all agreed in a manifest affection of the brain and its functions. As the term *phrenitis* implies delirium, which does not always occur in fever, Dr Clutterbuck proposes *encephalitis* as a proper denomination for the entire class of idiopathic fevers.

On the other hand, Broussais contends that the primary and essential seat of inflammation in fever is the mucous membrane of the stomach, or of the intestines, or both; but especially the former; and that, therefore, the proper designation of it is *gastro-enteritis*. This fact was long admitted with regard to certain fevers called symptomatic, but Broussais extends the assertion to comprehend all fevers, and this is the main feature of his celebrated doctrine, and that feature of it which he maintains to be peculiarly and exclusively his own.

Thus it would appear that the prevailing doctrines relative to the nature and seat of fever, as Dr Smith very justly remarks, are two, the direct reverse of each other; one, that it is a general disease affecting the entire system; that this affection of the system consists in debility, which is manifested first by a loss of energy of the brain, but which extends to every organ and every function; and that consequently *the absence of any primary local disease* ought still to form an essential part of the definition: the other, that it is, in the strictest sense, a *local disease*; that its primary seat is invariably fixed in some one organ; that the affection itself consists in inflammation, and that that inflammation is seated according to one opinion (Clutterbuck's), in the *brain*; according to the other (Broussais), in the *stomach*.

The author next presents some very interesting remarks on the necessarily opposite treatment which these two prominent doctrines lead to. He who believes that debility constitutes the essence of fever, must abstain from every kind and degree of depletion; while he who considers it of an inflammatory nature, must feel himself impelled to resort to the lancet and leeches. Dr Stoker, an advocate for debility, enumerates the remedies for fever in the following order, according to their

relative importance: namely, in *mixed fever*, 1. Cleanliness; 2. Ventilation; 3. Cool regimen; 4. Plentiful dilution; 5. Purgatives; 6. Topical bleeding; 7. Antimonial powders. In *typhoid fever*, 1. Yeast; 2. Wine; 3. Aperients; 4. Emetics; 5. Blisters; 6. Tepid or cold affusion. In this enumeration, it is perceived, general bleeding is omitted, and local bleeding is placed sixth in rank as to importance in mixed fever, and is not enumerated as a remedy for typhoid fever. On the other hand, Dr Clutterbuck, an advocate for inflammation in fever, says, using his pregnant words quoted by Dr Smith, "Fever, to be treated successfully, must be treated on the general principles of inflammation; but, at the same time, with the modifications arising out of the peculiar nature of the organ affected; and, in some degree also, the nature of the exciting cause. Bloodletting, which but a few years ago was looked upon with abhorrence in the cure of contagious fever, and the utility of which is still far from being generally appreciated, is proved by ample testimony to be not only the most powerful, but the safest of remedies." And Dr Broussais teaches, that in every variety and stage of fever, leeches are to be applied to the stomach, and that scarcely any thing else is to be done except enjoining rigid starvation. Emetics, purgatives, bark, wine, are all denounced; and a costive state of the bowels continuing during five or even ten days, so far from requiring interference, is, according to him, a good symptom.

Dr Smith seems to consider these various doctrines to be carried to extremes, and, therefore, all to include a certain portion of error. Thus he says,

"All the partial and imperfect views of fever which have now been brought before the eye of the reader, originate in one or other of the following errors, obvious as they all are: either that of assuming as a fact what is merely a conjecture; or that of assigning to the genus what belongs only to the species; or that of characterizing the disease by what appertains only to a stage; or that of mistaking the effect for the cause. On careful examination, it will be found that one or other of these errors, which are as serious as they are palpable, has vitiated, in a greater, or less degree, every generalization of fever that has hitherto been attempted." P. 42.

Thus, continues Dr Smith, the believers in debility derive their notion of the whole disease from the phenomena which

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ur in the first and last stages only; overlooking the immediate stage, in which there is generally the most unequivocal indications of increased sensibility in the nervous, and increased action in the vascular system. Again, when they contend that debility is the essence of all fevers, they affirm what is indisputable of fevers in particular seasons, climates, and constitutions; but beyond this their generalization fails.

Again, the advocates of the opinion that the essence of fever consists in a morbid condition of the blood, assume something as a fact which has not been yet proved. The blood may be changed in fevers, but Dr Smith contends that those who assert this fact do not *know* it to be so, have not appealed to authority in such a way as to arrive at any certain knowledge. But even admitting that changes take place in the blood, they occur too late in the disease, according to the author, to be considered as constituting its essence.

Thus, also, in attributing fever to inflammation of the brain as the sole cause, the error has been fallen into of assigning as a character of the whole genus what only belongs to a species; and a similar error is committed when inflammation of the mucous membrane of the stomach and intestines is assigned as the sole cause of fevers; for while such inflammation is sometimes absent, it is, when present, in innumerable instances, an effect and not a cause.

In this manner Dr Smith undertakes to point out in what respect the more celebrated theories of fever are defective, and proceeds to remark that the subject cannot be understood until we obtain exact answers to the following inquiries: 1. What is the series of phenomena which constitutes fever? 2. What are the particular phenomena which are common to all its varieties? 3. What is the order in which these phenomena occur? 4. Which are the organs, and what their states, upon which these phenomena depend? 5. What are the external signs of these internal states, or what the indications by which their existence may be known? 6. What is the external noxious agent or agents, or the exciting cause or causes of the disease? 7. What is the particular remedy, or the particular combination of remedies, which is best adapted to each state of each organ? Dr Smith does not flatter himself that he is able to answer all these questions, although he

thinks that sufficient information is possessed to answer several of them with a high degree of probability.

Conceding that the phenomena of fever, that is, the events which are obvious to our senses, have been minutely observed and faithfully reported, and that, therefore, the first inquiry in the above list is answered; still, as many of these events are observed to be often absent, while it cannot be doubted that fever is nevertheless present, Dr Smith conceives that we must necessarily proceed to the second inquiry; namely, what is that particular combination of events which is essential to the situation of the disease? In singling out this particular series of events we are liable to several sources of error. Thus we may enumerate too few; or mistake the adventitious for the essential; or place them out of their true order, supposing that which is antecedent to be sequent, and, consequently, assigning that as a cause which is really an effect.

Dr Smith proceeds:

"The first thing to be done, then, is to ascertain the course of symptoms; and the second, to determine the order in which they occur. When these two points have been made out, what is essential and what adventitious, as well as what is the cause and what the effect, become at once clear and certain. But the difficulty lies in discovering, amidst the infinite diversity and contrariety of symptoms, when we may safely assure ourselves that we are in possession of all the essential phenomena. Our guide is *invariableness* of concurrence. If we can ascertain that a certain number of events *invariably* take place in every form and degree of fever, these events will give us the particular phenomena which are common to all the varieties of the disease. If we can further ascertain that these events invariably concur in a certain order, we shall have discovered what events bear to each other the relation of cause and effect. And the establishment of this relation of events, their constant connexion with each other, the uniform antecedence and sequence appears to me to be the only theory after which it is consistent with the principles of sound philosophy to search. If I have endeavoured to establish this connexion, and have thus ventured, as I conceive, in a strictly philosophical sense, to propose a theory, in doing so I have carefully restricted myself to the attempt to deduce a legitimate conclusion from facts previously ascertained. It does appear to me that these three points, namely, the common phenomena, the invariableness of their occurrence, and their mutual

relation, are satisfactorily established. Whether I shall be able to communicate this conviction to the reader I do not know; but I hope that he will at least coincide with me in opinion, that this mode of investigating the disease affords us the best chance of arriving at satisfactory results." P. 48.

In this extract our readers are presented with a view of Dr Smith's system of philosophizing, in relation to fever. How far he has made it available in producing a masterly analysis of his subject, abundant evidence will be furnished in the progress of our review.

CHAPTER II. *Varieties of Fever. Common Phenomena. Organs always diseased, and Functions deranged in Fever. Fever not Inflammation. Common Phenomena of Fever exemplified in Plague, Yellow Fever, &c. Received Classification and Nomenclature defective. True Principle of Arrangement.*

The importance of the author's second chapter is shown by the above synopsis of its contents. It opens by calling attention to the numerous varieties of fever, and to there being, nevertheless, a *something* which establishes the identity of the disease under every diversity of aspect, whether it be the yellow fever of the West Indies or the plague of Constantinople or of Egypt. This *something* must embrace the common phenomena, and what these are the author proceeds to inquire.

Boerhaave undertook to ascertain the common phenomena of fever by collecting the symptoms observed in a great variety of fevers, and then excluding those not common to all. Proceeding in this way, he was surprised to find his catalogue ultimately reduced to three, namely, shivering, frequent pulse, and heat. To this catalogue Cullen makes the following additions:—"languor, lassitude, and other signs of debility, together with derangement of the functions, particularly a want of vigour in the limbs, *without any primary local affection.*"

Dr Smith very justly remarks that Boerhaave's common phenomena are grossly inaccurate, as shivering, frequent pulse, and heat, are each absent in certain fevers; and he thinks that that part of Cullen's definition given above in italics has so direct a tendency to mislead the mind, and positively to prevent it from observing the real phenomena of the disease, that he questions whether the introduction of this single phrase

into the definition of fever has not been the occasion of much practical mischief. For our parts we heartily concur with Dr Smith in this statement; for whether we consider ourselves Broussaists or Anti-Broussaists, or disclaim to be the disciples of any particular school, we must concede that nothing could be more unfriendly to the progress of pathology than views of disease emanating from high names that should discourage attention to the condition of the internal organs.

"This total failure of men" of unquestionable acuteness and splendid genius "in their attempts to discover the common phenomena of fever, affords a strong presumption that they have not pursued this object in the right path. Without doubt before it is possible to succeed in any scientific investigation, it is necessary to form a distinct conception of the object of the inquiry. Fever is not an entity, not a being possessing a peculiar nature; and the object of investigating it is not to discover in what such nature consists, or what it is that constitutes its essence; but fever is a series of events, and the object of inquiry is to discover what the events are; what the events are that invariably concur in the series; and in what order they constantly succeed each other. When we have discovered this we have ascertained all that we can ever know of what is termed the nature of fever, as it is this, and only this, that we can ever know of any object or process." * * * "Every natural process consists of a number of events, and our knowledge of that process is complete when we have ascertained the events themselves, the order of their succession, and the events to which they give occasion. We can make no real progress in knowledge unless we keep steadily in view the kind of information which it is possible to acquire, and which it is to our purpose to seek, and dispossess our minds of the phantoms which have so long enthralled and abused them." P. 58.

The author next enters upon the inquiry, what are the events which invariably concur in fever? And here we are very properly cautioned not to suppose that symptoms are events. Symptoms are only indications of events, and are the external and visible signs of internal, and, for the most part, as long as life continues, invisible conditions of the organs. It is, therefore, to the state of the organs that we must look for the events which constitute fever.

"Are there any states of any organs that always exist in fever? Are the states constant? Are the organs affected constant; and can both be ascertained? If this can be truly an-

answered in the affirmative; if it can be proved that there are certain conditions of certain organs which invariably exist in fever, in every type, in every degree, in every stage of it, we shall have arrived at a satisfactory conclusion relative to the first part of our inquiry.

"The evidence is as complete as observation during life and inspection after death can make it, that a morbid change does take place in a certain number of organs in every case of fever, from the most trivial intermittent to the most alarming continued fever; from the mildest plague to the most malignant typhus; that at the two extremes of this scale, and at all the intermediate gradations of it, there are certain organs which are always affected, and that the affection in all is similar.

"The identity of the organs is inferred from the indications they give of disordered function during life: the identity of the affection is inferred from the similarity of morbid appearances which they exhibit on examination after death.

"The organs affected are those which constitute the nervous system; those which constitute the circulating system, and those which constitute the systems of secretion and excretion. The spinal cord and the brain; the heart and the arteries, especially their capillary extremities; the secreting and the excreting organs, which in fact are composed, essentially, of the capillary extremities of the arteries; the secreting and the excreting extremities of these arteries, especially as they terminate in the external skin, and in the mucous membranes which form the internal skin,—this is the chain of diseased organs: derangement in the nervous and sensorial functions; derangement in the circulating function; derangement in the secretory and excretory functions,—this is the circle of morbid actions.

"There never was a case of fever in which all these organs and affections [functions?] were not more or less in a morbid state; there never was a concurrence of this morbid state, in this complete circle of organs, without fever. The events which *invariably* concur in fever, then, are a certain deviation from the healthy state in the nervous and the sensorial functions; a certain deviation from the healthy state in the circulating function; a certain deviation from the healthy state in the functions of secretion and excretion. A deviation from the healthy state in one circle of action will not present the phenomena of fever; a deviation from the healthy state in two circles of action will not present the phenomena of fever; there must be a deviation in the three circles before fever can exist. Such, then, are the common phenomena of fever."

P. 60.

These copious extracts give our readers a full view of the

doctrine of fever advocated by Dr Smith. He, however, does not think that the mere invariable concurrence of morbid action in the three systems mentioned will, of itself, constitute fever: their derangement must occur in an invariable order. And here the author evidently proceeds on the principle, that the identity of a morbid affection is not determined merely by the organs or functions affected being identical, but also by their being affected in the same order. We agree with the author on this point, that the sequence of morbid phenomena is an essential character in disease. What, then, is the sequence of morbid affection in the three systems mentioned, and is it in an invariable order? Dr Smith answers this question in the affirmative, and asserts that the derangement takes place first in the nervous and sensorial functions; next in the circulating function, and last in the secreting and excreting functions.

The author next examines the question,—*Is fever inflammation?* In his opinion, it is not. In fever there are certain events, occurring always in the same order; and the same is true, according to him, in regard to inflammation. But in inflammation the events are different; or if this point is not so well made out, at least, the morbid events occur in a different order. Thus in diseases admitted to be inflammations by all parties, such as pneumonia, hepatitis, &c., the spinal cord and brain are *never* the organs in which the *first* indications of disease occur. On the contrary, the earliest indications of disease are afforded by the organ which is the seat of the inflammation; and if the nervous function is affected, it suffers but little, and is the last to be involved, instead of the first, in the series. The author very justly remarks, that we do not know what is the physical condition of the organs involved, whether in fever or inflammation, contrasted with their state in health, and perhaps we shall never arrive at this knowledge. Thus he says—

“What inflammation is beyond the series of events we are able to observe, we do not know; what fever is beyond the series of events we are able to observe, we do not know. We compare the events and we see that they differ; and since the use of names is to mark and express differences, it is right to distinguish those different events by different terms. But though in the present state of our knowledge, we are not jus-

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In considering fever and inflammation to be the same; yet the close, perhaps the constant connexion between them, is a fact of the utmost importance to be known, and requires to be incessantly before the view of the practitioner." P. 64.

The author, believing that he has established what are the functions deranged in fever, and their invariable order of occurrence, next proceeds to show how the infinite varieties of fever may be accounted for, consistently with his doctrine.

He does by adverting to the fact of the different degrees in which the several functions involved will be affected. Thus, as he, if the spinal cord and brain be intensely affected in the outset, violent pains in the limbs, ferocious headach, early and violent delirium will occur; or, on the contrary, there will be loss of voluntary motion, and such an overwhelming of the sensorial faculties, as almost to constitute apoplexy. Here then we would have the symptoms which usher in the plague. If the organs of secretion are seized with peculiar violence, the liver may pour out an immense quantity of vitiated bile, which may irritate every surface it touches, and rapidly tinge the whole body. In this case, according to the author's pathology, we should have the yellow fever of the West Indies. If there should be less violent affection of the spinal cord and brain than occurs in plague; if there be great pain in the back and limbs, intense headach, early and violent delirium, a burning skin, a quick and strong pulse, urgent thirst, and constipated bowels; we shall have an example of the acute, cerebral variety of fever of Great Britain. If there be, not headach, but giddiness; not delirium, but stupor; not a burning hot, but a moderately warm or cool skin; not a frequent and strong, but a frequent and feeble pulse, then we have the subacute cerebral variety of fever of the same country. If with symptoms similar to the last mentioned, occurring in the commencement, there be associated greater prostration, and a rapid increase of the derangement of the nervous and sensorial functions, together with a brown and dry tongue and tender abdomen, and dark and offensive stools, we have what is called typhus.

In the examples here given, the more urgent symptoms occur in one set only of the organs which compose the circle involved in fever; nevertheless, symptoms are present, accord-

ing to the author, indicative of derangement in the two other sets of organs.

Dr Smith very properly criticises the attempt to seek for the common phenomena of fever in the symptoms, in the following words :

“ That no two cases of fever can ever be precisely the same, and that it must be vain to seek for the common phenomena of the disease in the external symptoms must now be obvious; and why success can never attend the search after these common phenomena in such symptoms as ‘ shivering, frequent pulse, heat,’ must be equally manifest. These as well as all other symptoms depend upon the state of the organs. But we have seen, that in one degree of the same affection of the same series of organs, there may be shivering, excited pulse, burning heat; while in another degree there may be no shivering, a slow pulse, and a cold skin : so that from one and the same affection, differing only in the degree of its intensity, the symptoms may not only vary, but be directly opposite. The proper object of pursuit in all these inquiries, therefore, is the real nature of the affection, and the symptoms are of consequence only as they are indications of the existence of that affection. Symptoms are not *the* thing in which observation should terminate, but signs of the thing, without the knowledge of which, in every individual case that may come under his care, the practitioner ought never to be at rest, and to the discovery of which they serve as guides.” P. 70.

The author objects to the common division of febrile diseases into idiopathic and symptomatic. He objects to it because he considers the so called symptomatic fevers to be inflammations. According to his view, there are no fevers but idiopathic fevers. He also criticises the division of true or idiopathic fevers into intermittent and continued, as a classification founded on a single fact in the highest degree trivial. We subscribe most heartily to this sentiment of the author.

Again, the division of continued fever into synocha, typhus, and synchus, is liable to the objection that it is erected upon no assignable principle. The phenomena, laid down in the nosologies as constituting synocha, exist in all acute inflammations; and the other two names are liable, according to the author, to this further objection, that the groups of symptoms said to characterize them do not occur in nature.

“ Again, while, according to this received arrangement, a train of symptoms, every one of which is found in acute in-

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fl mation, is made a distinct genus of fever, numerous diseases, each forming an exquisite specimen of fever, are totally excluded from the order, and placed at a considerable distance in the nosology. Because scarlatina is a fever attended with a peculiar eruption on the skin; because rubeola is a fever attended with an eruption on the skin also peculiar; because variola is a fever with another peculiar eruption, and urticaria with another; these diseases are not made varieties of fever, but, designated by the term exanthemata, are formed into a separate order: while, on the other hand, fevers attended with petechiæ, with papulæ, with aphthæ, with vesicles, are accounted fevers, and accordingly are termed petechial, miliary, aphthous, erysipelatous, vesicular fevers; whence synochus petechialis, synochus miliaris, synochus aphthosus, &c." P. 76.

Dr Smith does not object to the propriety of naming these varieties of disease, but to this mode of classifying them, which diverts the mind from dwelling on those circumstances which make all of them varieties of one great disease, and fixes it upon those comparatively unimportant circumstances, which simply modify the malady, without in the least affecting its identity.

The author lays it down as a principle that the formation of the species of fever cannot be scientifically accomplished, until we have arrived at a perfect knowledge of the conditions of the organs on which the different trains of symptoms depend; and that as this exact knowledge has not been attained in regard to many of the species, the classification cannot possibly be made at present. Thus we do not know whether the condition of the organs is the same or different in intermittent and in continued fever; but this we do know, that a distinction founded upon mere periodicity is a very unsatisfactory principle of arrangement. We also know that intermittent and continued fevers are prone to pass into each other, in such a way as to establish an identity in essential nature. What may be the cause of periodicity in fever is a point, according to Dr Smith, enveloped in doubt: thus he says,

"What that condition of the system is, which, in forms of fever that are thus mutually convertible, causes one to persist in an uninterrupted series, another to remit, and another, after disappearing for a time, to recur in distant and regular paroxysms, is wholly unknown. Sydenham, indeed, cuts the knot and removes the difficulty at once. Speaking of the re-

turn of the fits in intermittent, he replies to the inquirer into their cause,—‘I would fain know why a horse comes to his growth in seven years and a man at twenty-one; or why some plants flower in May and some in June. I am persuaded that the progress of nature is as certain and regular in this case as in any other, and that the matter of a quartan and tertian ague is subject to nature’s laws and governed by them, as well as any other bodies whatever.’ The regularity of nature in the production of disease, no less than in the maintenance of health, cannot be doubted; but the point in question is not clearly one of those ultimate facts, into the reason of which it is wholly vain for the human mind to inquire.” P. 80.

On the question, what are the pathological differences between intermittent and continued fever, the author makes the following remarks:

“Hitherto, no one appears to have hazarded, even a conjecture, as to the cause of this striking difference between these two forms of disease; and pathology has afforded no clear light to enable us to determine whether the febrile circle of organs is similarly affected in both. Examinations of fatal cases have been made, but none on that large scale and with that accuracy which alone can render them of any value. I have endeavoured to ascertain the morbid appearances in the spinal cord and the brain, and in the mucous membrane of the respiratory and digestive apparatus, from those who have been long engaged in extensive practice in districts in which the ague prevails, but I have been able to obtain no satisfactory answer, excepting that intermittent does not kill! Greatly as the severity of intermittent is, without doubt, diminished in the present age, yet we cannot receive such an account without blessing the bark of the seventeenth and the skill of the nineteenth century.” P. 81.

Dr Smith states that the chief object of his treatise is to determine the pathological condition of the organs in the fevers which prevail in London, and which his situation as physician to the London Fever Hospital gives him such ample opportunities of investigating. It is only fevers called continued that he proposes to notice, and before entering upon them, he discusses the questions of the true principle of arrangement of fevers, and the nomenclature most convenient to be employed.

Dr Smith lays it down as a pathological canon that the same assemblage of symptoms in fever is always accompanied by the

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same invariable condition of the organs; that this condition of the organs in fever is always the same in nature, only differing in intensity in different cases; and that, therefore, fever is a unit, and differs, in its different forms, only in the intensity of the affection. We have, therefore, nothing to designate by names in fever, but different degrees of intensity. Some of these degrees it would be frivolous to distinguish by a name; while others, being practically important, must be designated by particular appellations. The author thinks all useful and practical purposes will be answered by arranging continued fevers under two great classes, the one comprehending the mild, the other the severe forms of the disease. As, however, he is averse to introducing new terms, he adopts, in preference, two names in common use to denote these classes:—namely, *synochus*, to express the milder forms of fever, and *typhus*, the severer forms, without reference to any particular meaning given to them by Cullen or other writers. To distinguish further differences which the author thinks have a bearing on practice, he subdivides *synochus* and *typhus* severally into *mitior* and *gravior*. These divisions he conceives will afford convenient and ample means of throwing into distinct groups all the varieties of fever that occur in Great Britain, which it can be of any practical importance to distinguish.

The author thinks this plan of nomenclature might be applied with advantage to fevers attended with eruptions. Thus scarlet fever and small pox each occur in a mild and severe form; and hence we would have scarlatina *synochodes* and *typhodes*; and variola *synochodes* and *typhodes*, &c.

CHAPTER III. *Synochus. Phenomena in Synochus Mitior. Phenomena of Recovery. Transition of Synochus Mitior into Synochus Gravior. Classification according to the different Organs in which the several Affections have their Seat.*

The symptoms in *synochus mitior* are, 1. Loss of mental energy. 2. An uneasy sensation, quite peculiar, which is different from, and more distressing than pain, and which Dr Smith proposes to call febrile uneasiness. 3. Pain first in the back and loins and then in the limbs. 4. An expression of dejection in the countenance, with a pallid and shrunk

appearance of the features. 5. A sense of chilliness, which, being independent of any diminution of caloric, indicates an altered sensibility in the skin.

All these symptoms are considered by the author as indicative of derangement of function in the spinal cord and brain. About this time the circulating system is beginning to be affected, evinced by the altered state of the pulse, which is invariably weaker than in health. At the same time, the respiration is shorter and quicker than natural. After a shorter or longer interval, the pulse, which was feebler than natural, becomes more full, strong, and generally more quick than in the sound state. Now the skin becomes really preternaturally hot, as evinced as well by sensation as by the application of the thermometer; but this heat is not uniformly diffused, being more intense in certain parts, as for example the head, than in others. Next the third order of functions in the febrile circle becomes deranged; that is, those of secretion and excretion. The mouth is now dry and parched, and the tongue begins to be covered with fur. The secretions of the liver, and of the mucous membrane lining the whole alimentary canal are vitiated, as is proved by the unnatural quantity, colour, and fœtor of the evacuations. The urine is likewise altered in its appearance, and the skin becomes dry and harsh as well as hot. At this period the pain in the back and limbs, and the general febrile uneasiness are much augmented.

We have given above the symptoms of synochus mitior as detailed by Dr Smith, from the first deviation from health to the last symptom in the series; and it is perceived that he makes out his case very satisfactorily. For while his description of the given form of fever is accurate, there is clearly shown to be a deviation from health successively in the nervous and sensorial functions, in the circulating function, and in the secreting and excreting functions.

The ordinary fever of London at the present day is characterized by an uninterrupted continuity in the phenomena, there being nothing like remission or intermission throughout its whole course. The tongue, in the milder form of the disease, remains moist and never becomes brown. Almost all attacked with this form begin to recover about the end of the second week. But now and then the symptoms will be mild

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for the first two weeks, and then, instead of convalescence, there will be no perceptible improvement. The patient grows weaker and lies more prostrate. Still he complains of no pain or uneasiness, and it is not easy to detect any trace of disease in any organ; yet it is but too evident that he will sink exhausted. After death it is commonly found that disease has been preying on some vital organ, although its presence could not be detected during life. Such cases generally occur in aged persons of worn out constitutions.

In this form of fever the first indication of returning health is marked by longer and more tranquil sleep. The patient lies more still, and on waking from his more tranquil slumber, spontaneously says that he feels better. The countenance becomes more animated, and its natural expression returns; the tongue begins to clean; and, after an interval of a few days, the appetite returns. In the mean time, the pulse usually becomes slower about ten beats in a minute; though occasionally it remains frequent throughout the entire period of convalescence.

“In some cases, on the contrary, when the attack has been very mild, the pulse sinks considerably below the natural standard, and is intermittent, a sign which I have uniformly observed to be attended with a sure and steady convalescence. In the meantime, the appetite becomes keener than natural; the strength gradually improves; and in a short time the patient is restored to his usual health and vigour.” P. 104.

In the synochus mitior, we have no opportunity of knowing the state of the organs from actual inspection, as the disease terminates favourably with hardly an exception; but Dr Smith very fairly infers that the morbid affection of the organs is slight, and that the diseased process which it sets up in them stops before it produces any change of structure.

When a mild form of fever, such as is above described, becomes severe, that is, passes into synochus gravior, it becomes so in consequence of the supervention of inflammation in certain organs. But Dr Smith contends that the inflammatory action thus supervening is considerably modified by the febrile state. The author has taken much pains to note the symptoms in these severer forms of fever, and to connect them with the several morbid appearances of which they are the signs. He has convinced himself that the organs secondarily

affected in these severer forms of fever are *always the same*, that the symptoms which indicate the morbid changes in them are *uniform*. The organs affected are the spinal cord and brain, with their membranes, the mucous membrane of the lungs, and the mucous membrane of the intestines, or in other words, the cerebral, thoracic, and abdominal organs. Each of these three sets of organs may, in different cases, be affected prominently, or they may appear to be equally involved. On all these four suppositions the symptoms will be peculiar and invariable; and, therefore, Dr Smith has thought it proper to describe Synochus Gravior under four heads: I. Synochus Gravior with Cerebral Affection, subdivided into subacute and acute. II. Synochus Gravior with Thoracic Affection. III. Synochus Gravior with Abdominal Affection. IV. Synochus Gravior with Mixed Affection.

I. SYNOCHUS GRAVIOR WITH CEREBRAL AFFECTION.

1. *Synochus Gravior with subacute Cerebral Affection* is attended with all the symptoms of synochus mitior up to a certain period, when the pain in the head, instead of diminishing, increases. The pain is not severe, and need not be, to indicate, nevertheless, extensive and dangerous affection of the brain. When pain is absent, it is replaced by giddiness; and where the two alternate, it indicates a more severe affection than where either exists alone. The heat of the skin is not generally great, but the head is usually hotter than other parts, and hottest over the seat of pain. The eye has a dull and heavy expression; more so than in the milder form of fever. The conjunctiva generally becomes bright and more glistening than natural; though, instead of this, the vessels are often turgid, and give the eye a "muddled" appearance. There is great sensibility to light and sounds. The countenance has a peculiar expression not easy to be described. The face is often flushed, but sometimes pallid. There is much restlessness, and no refreshing sleep. Delirium of a mild character now generally comes on. In the mean time, the pulse, tongue, and evacuations do not materially differ from their state in the mild form of the fever, or synochus mitior.

Such is the train of symptoms which Dr Smith enumerates as indicating a subacute affection of the brain. They generally last from eight to fifteen days, when a remarkable change

takes place, which, according to its character, indicates recovery or a fatal issue.

If recovery is to take place the patient enjoys refreshing sleep, which relieves the febrile uneasiness, headach, and heat and dryness of the skin. The next sleep is longer and more refreshing, and after waking, the countenance becomes more natural, the skin cooler, the tongue cleaner, and the pulse slower. From this period convalescence will probably proceed just as in synochus mitior.

If the case is to be fatal, the pain in the head, at this period, disappears or strikingly diminishes. The pain in the back and loins, however, will frequently continue for some time longer. Simultaneously with these changes, there is a remarkable diminution of sensibility. "The mind is duller and more heavy. The patient may still be roused to answer with tolerable coherence if spoken to; but when left to himself he is confused and stupid. The eyes now become injected, often suffused; and the heaviness and dulness of their expression is increased."

At this time, delirium most commonly comes on; or, if the increased insensibility be not attended with delirium, it is almost always accompanied with moaning and incoherent muttering. The pulse, in the mean time, becomes more frequent and weaker. Symptoms indicative of the implication of the chest and abdomen now arise; as a case purely cerebral rarely happens. The tongue becomes loaded and often dry; "and it is strikingly characteristic of the state of the nervous system, that while the tongue becomes dry the thirst diminishes."

The disease may proceed thus far, and yet, according to the author, not prove mortal. When recovery is to take place, more tranquil and longer continued sleep is always the earliest sign. Other favourable signs are:—less delirium on awaking; increase of sensibility, or improvement in the countenance, even though slight; and the tongue cleaning on the edges, or becoming moist. These favourable signs concurring, recovery may be predicted with tolerable certainty. It may be two or three days before the pulse changes, but generally it will fall ten beats in a minute after the lapse of twenty-four hours.

"Now and then, on leaving a patient in the evening with a

pulse at a hundred and twenty, we are surprised and delighted to find it in the morning as low as a hundred. When the pulse has thus fallen towards the natural standard, when the tongue has begun to clean, and the skin has become cool and soft, however desperate his condition but a few days before, the patient may be said to be convalescent.

"But though this favourable change is sometimes witnessed, yet, from the point at which we left off the description of the progress to a fatal termination, the too common history is increasing restlessness and sleeplessness; insensibility lapsing into coma; further acceleration of the pulse; greater dryness of the tongue and decreasing strength; until, at length, the powers of life, receiving less and less supply from the great system in which they have their seat, become completely exhausted." P. 118.

The author next goes on to enumerate other trains of symptoms which occur in particular cases, but which we have not space to notice.

2. *Synochus Gravior with acute Cerebral Affection*.—When the cerebral affection is acute, the symptoms are the same as in the subacute form, only more intense. The pain in the head, back, loins and limbs is more severe, and the giddiness more violent. The sensibility is excessive, and the least noise or light becomes intolerable. The skin is intensely hot, but peculiarly so over the scalp; so that if the head be shaved and wet cloths applied, they become quickly dry. The febrile uneasiness is excessive, the patient being very restless and wholly without sleep. The pulse at one time is strong, full, bounding, and not easily compressed, but almost always soft; at another time it is oppressed. A slow and intermitting pulse is an alarming symptom, as it is characteristic of an exceedingly acute attack of cerebral disease.

If remedies are not vigorously employed the pain ceases, and passes into insensibility within the fourth day. The indications of thoracic and abdominal affection are less marked than in synochus with subacute cerebral affection; but this arises from the intensity of the cerebral affection, which obscures the signs of disease in the other organs.

Such is an outline of the symptoms, as given by the author, characterizing synochus gravior with cerebral affection, whether subacute or acute. The former runs its course generally

in from three to six weeks, the latter in from seven to ten days.

II. *SYNOCHUS GRAVIOR WITH THORACIC AFFECTION.*

Perhaps in all cases of febrile disease the mucous membrane of the bronchia is affected; but when the thoracic affection becomes prominent, the symptoms properly constituting the febrile train are modified, and others are superadded derived from the disease of the respiratory organs.

The new and peculiar symptoms in this modification are, pain in the chest, sense of stricture or dyspnoea; inability to expand the chest by a full inspiration, without pain and uneasiness; cough, sometimes dry, sometimes accompanied with foamy mucous expectoration; respiration slow and heavy, or short and quick, but never natural; being frequently accompanied with the noise termed mucous rattle. The pulse in the commencement may not be above 80 or 90. It is generally weak, though now and then full and of good strength; but whatever other character it may possess, it is almost always soft. As the disease advances it rises in frequency and becomes weaker. Towards the end of the disease it is almost always hurried and feeble, although occasionally it is observed at this period to become suddenly slow and intermittent. The tongue is unusually foul, commonly moist; but, in severe affections, and in their advanced stage, it sometimes becomes dry. The skin is often moderately warm, but never intensely hot. Commonly it is cool, and of a more dusky colour than natural.

III. *SYNOCHUS GRAVIOR WITH ABDOMINAL AFFECTION.*

In synochus mitior the affection of the mucous membrane of the stomach and bowels is slight, and passes away without producing any change in its structure. Indeed Dr Smith contends for the invariable derangement in the functions of this organ, throughout its whole extent, from the mouth to the anus; but he does not seem to consider this derangement as primary or causative, as the Broussaists would contend, but coexistent with the febrile train, or consequential to it. Thus in characterizing this division of synochus, he says the abdominal affection may be severe from the commencement, and give early and obvious indications of its existence; or it may come on at some subsequent stage of the disease; and then, although the

affection be equally severe, the symptoms which denote it are materially different. On the basis of whether the abdominal affection occurs early or arises late in the disease, the author describes synochus with abdominal affection under two heads.

1. If the abdominal affection be severe from the commencement, there will be, in addition to the ordinary symptoms of fever, nausea, sometimes retching, and at other times vomiting. Whenever they occur in the commencement they are to be taken as certain signs of abdominal affection, more severe than ordinary. At this early period the bowels are commonly constipated, and have been so for some days previously to the attack; but in a day or two they pass into the opposite extreme. Dr Smith considers the concurrence of nausea, retching, vomiting, and purging, in the commencement of fever, to be a certain proof that severe abdominal affection is present, which, if not actively treated and effectually checked at this early stage, will soon render the case formidable, if not hopeless.

When the abdominal affection is thus early and open, it is often attended with pain, which, with the other symptoms mentioned, characterize exquisitely marked cases; but pain is by no means an invariable symptom even in severe cases. Pain, upon pressure on the epigastrium, is much more uniformly present. After the tenth day of the disease, at a period when the abdominal affection is most intense, the patient rarely complains of pain, even though it may have been severe at first; nevertheless, the slightest pressure on the abdomen, but especially on the epigastrium, cannot be borne. Thus, though acutely sensible to pain on the least pressure, he is wholly unconscious of it when left to himself.

Dr Smith here remarks what he considers a remarkable coincidence in the progress of the symptoms in the cerebral and abdominal cases. In both, the pain in the head and abdomen respectively diminishes after a certain time, and then ceases; and he conjectures that the analogy would be complete, if the brain, like the abdomen, could be examined by pressure.

“While the pain lessens or ceases as the abdominal affection advances, the purging, on the other hand, continues, often it increases. Purging, succeeding to constipation and to pain, and remaining after the subsidence of the pain, affords an infallible indication of abdominal disease.” P. 144.

In these abdominal cases, the tongue is preternaturally red. Sometimes this redness is bright and vivid, and pervades the whole tongue; at others it is confined to the edges or tip. In the latter case, the body is often loaded with fur, which is variously of a dirty white, grayish, or dirty yellow colour. The papillæ are much enlarged, and are seen prominent through the fur, vividly red. In this condition the tongue always remains moist for some time, and the thirst is not urgent; but as the intestinal disease advances, it becomes less vividly red and more dry, and, in the meantime, the lips and teeth often become sordid.

“Instead of being from the commencement of a vivid redness, the colour of the tongue, in other cases, is of a darker and duller tint; there is less fur upon the body, and that which covers it is of a dirtier and darker tinge. This state of the tongue is always attended with greater thirst; it is apt to become more and sooner dry, and, at the same time, the lips and teeth become more and sooner sordid.” P. 145.

The author states that the pulse in this form of fever is without any striking or *apparently* distinctive character.

We have already stated the view of the author, that while the pain in the abdomen ceases, the purging continues or increases; but at a still more advanced period, the purging, he contends, also disappears, and the stools return to a more natural condition. These conditions of cessation of pain and return to more natural stools, *if accompanied by corresponding amendment in the other symptoms*, may be hailed as signs of returning health, but otherwise they merely indicate the transition of one diseased process into another. Thus it is perceived that in this subdivision of febrile disease, the succession of events, in regard to the evacuations, is first constipation, then purging, and next the cessation of purging and return to more natural stools.

2. The author next describes the subdivision of synochus with abdominal affection, where this arises in the progress of the disease, in the following graphical manner.

“The second form under which the abdominal affection exists is attended with much less striking symptoms. It requires great attention and daily examination to discover its presence and to trace its progress. It steals along its fatal course with a step as silent as it is sure, and the destruction that marks

its track is oftentimes alike unfelt by its victim and undiscovered by his most watchful guardian. It does not attack until the sensibility is already greatly diminished in consequence of the progress of febrile disease. No pain is therefore felt, and the only indication by which it can be detected is tenderness of the abdomen on pressure. But even the fullest pressure, although it generally excites some uneasiness, sometimes produces none whatever. There is often no purging, for when the affection comes on thus late, though the bowels may sometimes be loose, yet they are frequently even constipated. The tongue is generally red at the edges and the tip loaded with dirty gray or yellow fur, and sometimes dry. The pulse at this advanced period is generally 120." P. 147.

"On recovering from this state, for recovery does sometimes take place, the first indication of improvement commonly appears in the tongue, which shows a disposition to clear; and what is remarkable, the favourable sign which accompanies this improved condition of the tongue is *increased tenderness of the abdomen on pressure*. Not that the disease in the intestine is increasing, but disease in the brain is lessening, and, therefore, the patient is now sensible to a stimulus which before produced not the slightest impression. If on the following days the tongue continue to clear; if it grow less red; if at the same time the pulse fall, the sleep return, the sensibility increase, and the countenance become more animated, the patient may be considered convalescent." P. 148.

IV. SYNCHUS GRAVIOR WITH MIXED AFFECTION.

In treating of this division of synochus, the author cautions his reader against supposing that the epithet "mixed affection" is to be taken as implying that the cases previously described were unmixed. All that he wishes to convey by this designation is not simply that the organs of the brain, thorax and abdomen are affected, but that they are all affected in an exquisite degree. These cases must, therefore, be the most dangerous with which the physician has to contend.

Cases of this description occur much oftener than from the symptoms we should be led to suppose. Examination after death discloses their true nature. The brain, lungs, and abdomen are often found most extensively diseased, while the indications were confined, perhaps, to the brain and abdomen, or to the brain and lungs.

In these mixed cases Dr Smith contends for the sameness

of the affection in each organ, as when one organ only is affected. He conceives that each organ is liable to its own specific disease, and that the disease in it goes on with the utmost regularity, whether it be the sole organ so far diseased as to suffer a change in its structure or not. At the same time, he contends that the symptoms arising from each organ are essentially the same in the two cases. These views of the author may possibly be correct, but they have not struck us to be well founded.

From the view which the author takes of the subject, he conceives that it would be a mere repetition to detail the symptoms in the mixed cases, and therefore refers the reader, for the modifications they undergo in particular combinations, to the cases.

Near the close of his account of the mixed cases, the author expresses himself in the following manner:

“It seems to me to be impossible to study the pathology of ‘the mixed cases,’ without premising that the opinion that the seat of fever is invariably in some *one* organ is founded in partial, and, therefore, imperfect views; and I earnestly solicit the attention of those, who have hitherto contended for the strict locality of that seat, to these very interesting and instructive cases. It was by slow degrees, and after the study of the symptoms as they occur in all varieties, and, if I may so speak, shades of type, *in connexion with the morbid changes apparent after death*, that I was able to make out, what I have so often stated to be, the true circle of organs upon which the disease always seizes and always preys, and which it often irreparably destroys. In some of these mixed cases we see marks of irreparable destruction in this entire series of organs; and in every one, we see extensive disease in all of them. Coupling then, as we ought always to couple, these ascertainable and ascertained conditions of the organs in the fatal cases, with the symptoms of derangement manifested by these organs in *all* cases, whether fatal or not, a body of evidence presents itself, which appears to me to be irresistible, to justify the conclusion that the local seat of fever is at least co-extensive with these organs.” P. 157.

In the above extract our readers are presented with a general view of the difference in doctrine in regard to fever between the author and the followers of Broussais.

CHAPTER IV. *Typhus. Division into Mitior and Gravior. Typhus Mitior with Cerebral Affection, Subacute—Acute; with Thoracic Affection; with Abdominal Affection. Typhus Gravior. Dangerous Error that it consists in Debility.*

Though the appearance of a person labouring under typhus is different from that of a person affected with synochus, yet Dr Smith considers that a careful examination of the symptoms and morbid appearances in the two diseases clearly shows that they are really identical, and only different intensities of the same affection.

Typhus, like synochus, is divided by Dr Smith into mitior and gravior, and these divisions are subdivided, according as the brunt of the disease is borne by the brain, lungs, or intestines.

TYPHUS MITIOR.—I. TYPHUS MITIOR, WITH CEREBRAL AFFECTION.

This occurs in two degrees of intensity, distinguished by the author as subacute and acute.

1. *Typhus Mitior, with Subacute Cerebral Affection*, presents generally the same symptoms with the corresponding affection in synochus. The difference consists in certain modifications which the symptoms undergo, and which are detailed by the author as follows:—

1st. There is greater prostration of strength, both physical and mental, as evinced by great muscular debility, and by the great contrast often presented between the vigour and torpor of the mind in the course of only a few hours.

2d. The chilliness is greater and longer continued than in synochus; yet shivering is less constant, and the succeeding heat is seldom as great.

3d. The febrile uneasiness is greater. The restlessness is incessant; the face is pallid; the features are shrunk; and the expression of the countenance is most peculiar, being indicative of weakness and suffering. The pulse is always weaker and more rapid.

4th. In general, the pain in the head is less acute than in the corresponding stage of synochus. It is often replaced by dulness, confusion, stupor, and giddiness. The eye is dull, heavy, stupid, and without lustre. "It is remarkable, that

while the pain in the head is only slight, the pains in the back, loins, and extremities, and, as the patient himself says, in the bones, are severe."

5th. "When pain is present it diminishes sooner, and disappears more completely than in synochus."

6th. There is little or no sleep. There may be no violent delirium, but there is much inquietude.

7th. Delirium is more constantly present, and when it occurs, it occurs earlier, as on the sixth or seventh day. It consists in low muttering incoherence rather than in loud and violent talkativeness.

8th. Muscular tremor, like delirium, is much more constantly present in typhus than in synochus; and its relation to delirium is so close, that it is sometimes observed to supervene on the very same day.

9th. In the commencement of typhus, the pulse is sometimes of good strength, and may not exceed 90 in frequency; but as the disease advances it uniformly becomes weaker, smaller, and quicker, so that death rarely takes place before it has reached 120.

10th. The respiration is often not very obviously affected.

11th. The tongue is always foul on the first or second day. It seldom continues moist longer than three or four days, and it is often quite dry as early as the fourth. The apex and edges sometimes remain moist a day or two longer; but in a short time the whole tongue becomes perfectly dry and of a brown colour. As the disease advances, the colour becomes darker and darker, until quite black; it is then frequently fissured into deep chaps, while the lips and teeth soon become covered with a black sordes. "Were the sensibility not greatly altered, such a condition of the mouth and tongue must be attended with insatiable thirst; yet thirst is often not felt."

12th. In the early stage of typhus, the skin is frequently hot; but as the disease advances, it becomes less so, and through the greater portion of the disease it is moderately warm. Towards its termination it becomes cool, and some days before death its temperature falls below the natural standard. It is always of a darker colour than in synochus; the whole surface being of a dull and dusky tinge. Sometimes it is covered with dun-coloured petechiæ, at others, with florid petechiæ.

13th. Erysipelas first appearing on the face, then extending over the scalp, and often down the shoulders and back, is very apt to occur, and is a very unfavourable symptom.

14th. Typhus terminates much earlier, whether favourably or unfavourably, than synochus. Death frequently takes place as early as the tenth or fourteenth day; though by early and appropriate treatment, the force of the disease is sometimes so much lessened that it is as protracted as synochus. In thus attributing to typhus an earlier termination than to synochus, the author evidently restricts his views to primary typhus; for he somewhere admits that all fevers, when long protracted, are prone to assume the symptoms appropriate to typhus.

2. *Typhus Mitior, with Acute Cerebral Affection*, is characterized by the whole train of symptoms just enumerated, they being merely more intense in degree.

II. TYPHUS MITIOR WITH THORACIC AFFECTION.

We find ourselves altogether unable to condense the author's graphic description of this variety of typhus, and therefore give it in his own words:

"Prominent thoracic affection, as we have seen, is not unfrequent in synochus; in typhus it is more constant; and the signs which denote its existence are more obvious, but they are not precisely the same. The pain in the chest is less severe; it is more often absent altogether; while the sense of stricture and the dyspnœa are more urgent. The cough is more constantly attended with mucous rattle; the respiration is shorter and more hurried. The skin in general is cooler, and it is always more dusky. The dark colour of the skin, in severe cases becoming quite livid, is one of the most characteristic marks of intense thoracic affection. The colour of the cheek is at first of a deep and vivid red; as the disease advances, it becomes of a purple tinge, and at length it is quite livid. In these cases it is not uncommon for the respiration to be from forty to fifty in a minute. The pulse is invariably rapid and weak. The cerebral affection is equally peculiar and characteristic; it never consists of intense excitement; it is never accompanied with violent delirium; it is indicated by confusion, and stupor passing rapidly into coma; and it is attended with low muttering incoherence, or disjointed rambling; the trains of ideas that pass through the mind being extremely faint, and linked together by no distinguishable affinity. We know that one of the most essential

conditions to the due exercise of the sensorial faculties is the due supply of the brain with arterial blood; but in this state of the system arterial blood does not and cannot circulate through the brain, because it is not formed in the lungs; the patient is in a state approaching to asphyxia, and in very severe cases he remains for several days in as perfect a state of asphyxia as seems to be compatible with life. Why debility should, in these cases, be carried to the utmost possible extent; why such cases should form the most exquisite specimens of the adynamic state, need not be pointed out: the disease is concentrated in the very organ which elaborates the pabulum of life, and that stream, which should convey its vivifying and animating influence to every nook and point of the system, is corrupted at its source.

"It is in these cases, too, that the tongue becomes dryer than in any other; in its advanced stage it is sometimes quite black and even hard, and is altogether incapable of being protruded. Sometimes it is covered with a thick, black, and hard crust; at other times it is cut into deep fissures, so as to give it a cracked appearance. These states of the tongue without doubt arise in part from the excessive dryness, occasioned by the mouth being kept always open on account of the difficulty of respiring." P. 169 et seq.

III. TYPHUS MITIOR WITH ABDOMINAL AFFECTION.

This differs but little from the corresponding affection in synochus. The points of difference are the following: in the affection under consideration, pain in the abdomen is scarcely ever felt, and pain on pressure is less acute. More commonly both are entirely absent. On the other hand, the abdomen is more often swollen, hard, tense, and tympanitic, while the stools are more early and more constantly passed involuntarily. Hemorrhage from the bowels most frequently occurs here; an event not very uncommon in the severest and most protracted examples of the disease. The tongue is less constantly red, but more uniformly dry, black, and cracked.

IV. TYPHUS MITIOR WITH MIXED AFFECTION.

This variety of typhus, strictly speaking, does not exist; for the author says, that "whenever the brain, the lungs, and the intestines, become simultaneously and prominently affected in typhus, the case no longer assumes the mild, but lapses into the severer form. The author accordingly speaks of this complication under typhus gravior.

TYPHUS GRAVIOR.

Dr Smith asserts, and, considering his opportunities of judging, we confide in his statement, that the typhus gravior of authors is extinct in London. Those cases which approached nearest to it are, according to the author, mixed cases of typhus, or those in which the brain, lungs, and intestines, are simultaneously and intensely affected.

● All the examples of this form of fever which the author has seen, he finds referrible to two classes; one in which the arterial action is excessive; the other in which it is oppressed, or rather overwhelmed.

“In the first, the patient lies insensible with delirium, perhaps so violent that he cannot be kept in bed without restraint; with extreme restlessness and constant watchfulness; with rapid and panting respiration; with a tender abdomen, perhaps with frequent and involuntary stools; a dry, black and hard tongue; a quick, yet weak pulse, and the skin universally and pungently hot.

“In the second, he lies insensible, with a cold and dusky skin; with a swollen and livid countenance; with a heavy and oppressed respiration; with a pulse, perhaps not to be felt, or, if distinguishable, either so rapid that it cannot be counted, so small that it is like a thread beneath the finger, and so weak that it is lost by the slightest pressure; or else slow, irregular, and intermittent. In this state the patient is almost as completely paralysed as in apoplexy, and the attack is almost as rapidly fatal as apoplexy. It constitutes what has been called congestive fever.” P. 175.

The pages which follow of the author's text contain so many forcible truths, well expressed, that we think we cannot do better than to present them entire to our readers.

“Fortunately, these intense forms of the disease are of rare occurrence: they are witnessed only in solitary instances, and they arise either from exposure to a highly concentrated poison, or from some condition of the constitution, by which that power to resist the influence of noxious agents which is characteristic of life, is more than commonly diminished or exhausted. They have been conceived to form exquisite specimens of diseases of debility. But where is the debility? Not in the disease, for that is of giant strength; not in the patient, for remove, if you can but remove, a part of the load that oppresses him, and instantly an intensity of action will be set up in the whole system, perhaps as great as it is capa-

ble of exerting, and certainly greater than it is capable of sustaining, without the most imminent danger. The brain is overwhelmed by the intensity of its affection; the energy that should animate the system, and of which it is the great source, is withheld; but that energy is suspended, not destroyed; and the debility which seems to be the result is not real, but apparent, not direct, but indirect. The giant that lies prostrate on the earth, mastered by superior power, has still a giant's strength, though he do not at that moment put it forth: give him but the chance of throwing off the load that keeps him down, and he will soon show you that he is not weak. I have always been struck with the extraordinary clearness and decision with which the acuteness of Sydenham enabled him to make this important distinction, perhaps in the very first case that occurred to him, in which the discrimination was required. Having described, in his own powerful manner, an excellent specimen of congestive fever, to which he was called, he states that he ordered the patient to be bled; that the by-standers regarded the suggestion with horror; that the man seemed at the point of death; that to them it appeared that the abstraction of blood must inevitably extinguish the last remaining spark of life; while to him it was manifest that the patient was in this alarming condition, because he was oppressed by an overwhelming load, and if that could only be lessened, his condition would be the very reverse of what it now seemed; that, accordingly, on the removal of some ounces of blood, the state of oppression ceased at once, and fever arose of a true inflammatory nature, for the subdual of which repeated bleedings were required.

"It is remarkable, and it is highly characteristic of these intense forms of disease, that their pathology exhibits a striking contrast to that of the less severe affections. No morbid appearances are visible in the organs which seem capable of accounting for death. There are signs of vascularity; the vessels are turgid with blood, and consequently the organs on which they are spent are in a state of congestion. But they seldom, if ever, exhibit any real appearance of inflammation, and still less do they contain any true inflammatory product. Why? Not on account of debility; but because the force of the disease is so great as to overwhelm the powers of life at the first onset, allowing even of no reaction, and much less of that continued excitement which is part and parcel of the inflammatory state, and which is indispensable to an inflammatory product. Reduce the intensity of the disease a little, bring it just within the limit that is compatible with the continuance of life for a given time, and then the products

of inflammation appear in the greatest possible purity, variety, and extent.

“And this is precisely the fact, as is demonstrated by the condition of the organs in those ordinary types of fever, the essence of which has been supposed to consist in debility, and which have recently assumed the dignified name of adynamic. That men who are capable of looking only at the most obvious appearances of things, who, satisfied with what they find at the surface, give themselves no concern to discover its source, should continue to mistake the effect for the cause, and to consider, as in its own primary and essential nature, *that* to be debility, which is the last result of long-continued and most destructive energy of action, is highly probable; but on that very account, the fallacy is the more deeply to be deplored, because to these men must sometimes be committed the care of human beings who will fall certain victims to the error. It is easy to disregard the voice of reason when opposed to specious, however fallacious appearances, but it is difficult to withstand the evidence of sense. In justification of the strength of the language I use, I, therefore, appeal to the pathology I adduce. The notion of debility in the intense forms of fever, I look upon to be an error no less palpable in its nature than destructive in its consequences; and if the havoc it produces does not confer upon it a pre-eminence as bad as that of the very disease of which it is supposed to constitute the essence, it at least entitles it, in comparison with every other error in medicine, to the distinction recognized in society between the hero and the murderer: the one destroys a single human being now and then, but the other numbers its victims by thousands. It may be difficult to eradicate this mischievous opinion where it was first engendered, and where it still continues to be fostered, in the study of the falsely reasoning theorist, but it is easy to confute it at the table of the pathological anatomist, and it must ultimately fall, if not by the pen, by the scalpel.” P. 176 et seq.

CHAPTER V. *Scarlatina. Condition of the Internal Organs the same as in Continued Fever. Events which sometimes occur in Fever, but which are not essential to it.*

The author devotes but five pages to scarlatina, and what he says may be summed up in a few lines. With the exception of the peculiarities derived from the eruption, the condition of the internal organs and the symptoms which denote their disordered state are, according to the author, the same as in continued fever without an eruption.

We have already mentioned the author's division of scarla-

tina into synochodes and typhodes. The former he considers to be generally a trifling malady, and even in its most formidable aspect, capable of being subdued, in ninety cases out of a hundred, by prompt and active treatment. On the other hand, scarlatina typhodes he considers to be a most dangerous malady, being attended with the symptoms of typhus gravior, and susceptible of being subdivided like that disease into a form attended with excessive arterial action, and into a congestive form.

The author has appended to this chapter a page or two on certain events in fever, which he considers not essential to the febrile train, and, therefore, denominates accidental. He thus enumerates them:

1. Sometimes an extreme degree of tenderness takes place over the whole body. The sensibility of the skin is so much increased that the slightest pressure gives pain. This preternatural sensibility indicates a severe form of disease.

2. The author next mentions sloughing sores from pressure. This occurrence is known to the whole profession.

3. In severe and protracted cases, erysipelas is no uncommon visitant. When it occurs, it always indicates formidable internal disease, and is a very unfavourable sign.

4. Pain, swelling, hardness, and suppuration of the glands, such as the parotid, submaxillary, axillary, &c. are not uncommon. Such events show formidable disease, and are very unfavourable signs.

5. Severe pain in the joints, with tumefaction and excessive tenderness on pressure, is another accidental event mentioned by the author, which, when it occurs, usually comes on at the close of exceedingly bad cases, and always proves fatal. This peculiar affection has not, according to Dr Smith, been observed by any other writer.

We have now followed the author through his history of the different forms of fever as they occur in London, according to his classification of them. As our article has been extended to a sufficient length, we must defer our analysis of his chapters on the Pathology, Causes, and Treatment of Fever for appearance in the next number of our Journal.

ART. XIII.—CHERVIN ON YELLOW FEVER.

De l'opinion des Médecines Americaines sur la Contagion ou la non Contagion de la Fièvre Jaune, ou Réponse aux allegations de M. M. les Docteurs Hosack et Townsend, de New York, publiées, l'an dernier, dans la Revue Médicale, la Gazette de France et le New York Enquirer. Par N. CHERVIN, D.M.P. 1829, pp. 192.

Examen des Nouvelles opinions de M. le Docteur Lassis, concernant la Fièvre Jaune, ou Reponse à la brochure que ce Médecin vient de publier sur les causes des épidémies en général, et plus particulièrement de celle qui a régné, l'an dernier à Gibraltar. Par N. CHERVIN, D.M.P. Aout. 1829, pp. 46.

Examen des opinions de M. le Docteur Castel touchant la prétendue contagion de la Fièvre Jaune, ou Réponse à un écrit intitulé ; De la contagion dans les affections febriles. Par N. CHERVIN, D.M.P. Juillet 1830, pp. 51.

Lettre à Mr le Docteur Monfalcon de Lyon, sur la Fièvre Jaune qui a régné à Gibraltar en 1829. Par N. CHERVIN, D.M.P. Aout 1830, pp. 34.

“ Non verbis, sed factis.”

In a former number of this Journal, vol. viii, p. 387, &c. we presented to our readers a concise analysis of Dr Chervin's publications on the Yellow Fever. Since that period we have carefully perused several other essays from the same source, and have placed their titles at the head of this article with the intention of devoting a few pages to a summary of their contents.

In our preceding article we stated that a distinguished physician of this country had undertaken, in a letter published in the French newspapers, to invalidate some of Dr Chervin's statements, and that when we last heard from this gentleman he was engaged in writing an answer to that letter. We added, that from all we knew of his talents, and from our conviction of the superiority of his cause, we had no doubt our countryman would have no more reason to be satisfied with

the results of his attack, than some of Dr C.'s opponents in France had with those of their own warfare. The title of the first pamphlet before us will sufficiently indicate that it constitutes the answer we were expecting, and also show to whom we alluded when we spoke of a distinguished countryman. Our prediction of the success of Dr C. in this answer has been fully realised. Indeed, we do not hesitate to affirm, that we have seldom seen so complete and unanswerable a refutation of the charges and assertions preferred against an individual, as the one contained in this pamphlet. Dr Hosack and his friend Dr Townsend will, we have no doubt, think very differently; for no one likes to acknowledge, even to himself, that he has met with a most inglorious defeat. But we, who are not obliged to be so very blind to the errors of these gentlemen as they themselves necessarily are; nor to conceal from ourselves and others that they have behaved unwisely in this controversy, and have been punished for it, must, therefore, be allowed to state freely our opinion; to inform our readers, who will probably see more of the reply, if such a thing can be got up by our New York friends, than they can of Dr Chervin's publication, what was the nature of the impression we experienced from a perusal of the latter, and to guard them against the effect of ex-parte evidence. The writer of this article has not made up his mind on the subject of the controversy simply from reading Dr Chervin's pamphlet. He was already well acquainted with the principal points in discussion, and with the uncandid manner in which Dr Chervin had been treated in New York. He was, moreover, at Paris at the time when Dr Townsend was busily employed there in operating against Dr Chervin, and was a witness to the manner in which he endeavoured to baffle the efforts of Dr C.'s friends; he was in Paris, also, when Dr Hosack's letter appeared in the French papers, and was in almost daily intercourse with several of the gentlemen appealed to as evidence by Dr C. He knows the whole affair, therefore, as well as the parties themselves, and never hesitated, even before reading Dr C.'s pamphlet, to decide in favour of that gentleman, and to regard him in every respect the aggrieved party. We are really sorry that Drs Hosack and Townsend should not have been taught more caution by the constant defeats they

have sustained in this country, than to expose themselves in this manner to the deadly weapons of an adversary, with whom there are but few capable of contending in the field of polemics, in which he has so long been engaged, and who, on this occasion, it must be allowed, has laid on his weapons with no sparing hand. As Americans we blush for the defeat, but at the same time feel little commiseration for those who have incurred it, as they very gratuitously began the controversy, and conducted it with a disregard to the rules of urbanity towards Dr C., and of politeness in the tone of their publications, which reflects little credit upon them, and was quite unexpected in well bred gentlemen. Let us hope, however, that Drs Hosack and Townsend will, ere long, present to the public a satisfactory reply, based upon facts, not assertions, to Dr Chervin's answer; and that Dr T. in particular, will give some good reason for having interfered while at Paris, in an affair which did not interest him personally; for having, in his endeavours to baffle the hopes of Dr Chervin's friends at the institute, or to injure that estimable man in the opinion of the members of the medical academy, represented him in a light different from that in which he is avowedly held by a large number of American physicians, from Maine to Louisiana, and magnified the importance of some reports, and the weight of an authority on the points in debate, which, he ought to know, have made but few converts in this country.

It is right to state for the information of our readers, that at the time the committee of the royal institute was preparing a report to that scientific body, on the Memoirs presented for the Monthyon prize, and when it was yet undecided whether Dr Chervin would obtain the latter, Dr Townsend, who was at Paris, voluntarily went to much trouble to prevent this issue of the *concours*. Notwithstanding his efforts, however, efforts of which Dr C. complains, and, we think, not without reason, as the account of them contained in the pamphlet will convince every one, the institute awarded him a premium of 10,000 francs. Dr T. probably informed Dr Hosack of what was in agitation at Paris, on the subject of the yellow fever, for we find the latter stating to him in a letter which appeared in the *Revue Médicale*, in June 1828, and the *Gazette de France*

in August of the same year, that he is very glad to learn the Academy of Medicine has not pronounced in favour of the non-contagiousness of the yellow-fever, as, had it done so, it would have been forced to retract that opinion after reflecting on the facts contained in a letter he had formerly furnished Dr Chervin, and on the publication of which he begs Dr Townsend to insist, as he supposes it not to have been included among the documents presented by Dr C. to the academy. He accuses Dr Chervin of not having behaved in an impartial manner, while examining and extracting from the documents contained in the public archives of New York, and expresses a hope that the institute will suspend its judgment on the *ex-parte* documents of Dr Chervin, until he (Dr H.) has published a work on the subject, which he confidently expects will lead to very different conclusions from those advocated by Dr Chervin. He adds, that since he gave this letter to Dr C. he has witnessed other facts of the contagious nature of the yellow fever, and has lately received communications of the highest value to the same effect, from Sir Gilbert Blane and others, &c. Dr Chervin shows, in the most conclusive manner, that the letter furnished him by Dr Hosack, during his stay at New York, contains no fact to prove the contagious nature of the yellow fever; that this letter was not suppressed; that he was not as partial as Dr Hosack pretends, while seeking for documents in the public archives of New York, &c. Dr Chervin adds that until Dr H. feels disposed to communicate the additional facts he has collected on the subject of the contagion of yellow fever, we must be allowed to concede little weight in the controversy to the testimony of Sir Gilbert Blane, and proves the necessity of this by an extract from this gentleman's medical logic, in which he states, in reference to the history of opinion on the subject in question, in Philadelphia, precisely the reverse of what is true.

Having disposed of this letter Dr Chervin turns to another attack on the part of Dr Hosack, and to one he had to sustain from Dr Townsend. These attacks were published in the form of letters in the *New York Enquirer*. This series of documents commenced with a letter addressed from Paris to Dr Hosack by Dr Townsend, dated 13th March 1828. After

stating that the Academy of Medicine was occupied with the question of the contagion of yellow fever and with that of the propriety of abolishing quarantine laws, Dr T. adds, "I have been appealed to by the Academy to know how far the allegations of Dr Chervin ought to be depended upon." He remarks, moreover, that regrets are expressed at Paris at his (Dr H.'s) not having published his long expected work on the yellow fever; that Dr Chervin tries to convince every one, that Dr Hosack's silence arises from a sense of the incorrectness of his doctrine—calls this a calumny—presses on Dr Hosack to publish that work—insinuates that Dr C. is one of those *unworthy members of our profession* who, to further their selfish views, are ever ready to sacrifice truth to falsehood, &c. The next letter is from Dr Townsend to the President of the Royal Academy of Medicine, dated New York, 28th November 1828. In this he endeavours to persuade that venerable physician that the Academy of Sciences has done wrong in awarding a premium of ten thousand francs to Dr Chervin. "I did not conceive, he says, that even so small a sum as that would be paid to any person for having spent nearly the half of his life in collecting together, and *afterwards industriously disseminating a mass of spurious papers*, (it is in this way that Dr T. treats documents furnished by the most respectable physicians in this country, Spain, and the West Indies!!) which he knew in his conscience were calculated to present an unfair and imperfect view of the whole ground of the controversy." What will the very great majority of physicians in this country who are non-contagionists think of this? He accuses Dr C. of misrepresenting to the Academy of France the state of opinion in this country on the subject of the yellow fever (!!!); of carefully concealing or suppressing all the facts by which an opinion contrary to his own might be established (how many are there, and in what do they consist?); accuses him of being stimulated *by cupidity more than by patriotism*; states as his belief, that Dr C. was under the influence of preconceived theories and prejudices, before he undertook the investigation of the subject, and that his testimony cannot be relied upon. He talks of a reaction which took place among the members of the Academy after they became acquainted with some facts communicated by Dr Hosack and himself, and when others, re-

ceived from Spain by Mr Parriset, were more generally known, and expresses the belief "that many of the members of that body, as well as of the Academy of Sciences, are now thoroughly convinced that they have lent too credulous an ear to his (Dr C.'s) misrepresentations and malversations; and that they have, in fine, been most egregiously imposed upon." He terminated by once more charging Dr C. with abusing the courtesy shown to him by the Board of Health of New York in permitting him to make extracts from their archives.

This *important document* was presented for inspection to Dr Hosack, who, in a letter of the same date and published at the same time, thanks Dr Townsend for it; speaks of the *base* conduct of Dr Chervin in withholding from the public the communication he (Dr H.) made to him on the subject of yellow fever, and the facts it contains and refers to, calculated to establish the contagious nature of that disease. He reverts once more to the uncandid conduct of Dr C. in *garbling* from the public documents (of N. Y.) those circumstances and materials only which he considered calculated to sustain his belief; to his receiving the reprobation of the municipal authorities of that city; he protests *against the gross imposition* Dr C. has practised upon the liberality of the Academy of Medicine and of Sciences of Paris by his fraudulent misrepresentations relative to Sir Gilbert Blane, to himself (Dr H.) and others, and terminates by stating that the documents possessed by Dr Townsend, derived from the constituted authorities of New York, will most abundantly *convict Dr C. of mala fides* on this subject, so deeply interesting to humanity.

To all this abuse,—to all these grave accusations of dishonest conduct, Dr C. answers in a calm and forcible manner. He refutes in the most conclusive manner every assertion of his opponents, and states a few facts relative to the conduct of one individual while at Paris which reflects little credit upon him. He shows, in reference to the contents of Dr Townsend's letter and the last epistle of Dr Hosack, by documents of an unimpeachable character, that the Academy was *not* occupied with the question of the propriety of abolishing quarantine laws. 2. That the Academy *never* applied to Dr Townsend to know how far the allegations of Dr Chervin ought to be depended upon. 3. That he (Dr C.) never asserted that Dr

Hosack had some doubts relative to the correctness of his doctrine, and that he has never attributed the non-appearance of Dr H.'s work to that cause. 4. That Dr T. is wrong in asserting that he (Dr C.) has profited by the political turn which the question of contagion assumed in consequence of the famous *cordon sanitaire*, to disguise the state of public opinion on that subject in this country; since the *cordon* was established in 1821 and he commenced his researches in 1814. 5. That he was not stimulated by cupidity more than by patriotism, as maintained by Dr Townsend. 6. That he did not suppress, in his communications to the Academy, any of the facts that could militate against his own views; as is proved by the testimony of all the members of the committee. 7. That he did not merely present a *list* of papers; as is shown by the tenor of the report presented to the Academy by that committee. 8. That he did not commence his inquiries with a fixed opinion on the subject of the non-contagiousness of the yellow fever. 9. That the non-contagionists of the United States do not, as maintained by Dr T., differ all more or less in their opinion. 10. That he did not falsely insinuate that quarantine laws have been abolished in this country; since he published so early as 1823 the fact that such laws were in force here. 11. He clears up in the most satisfactory manner the affair of New York, on which Drs Townsend and Hosack have laid so much stress.

In a word we believe that no one can read the publication of Dr C.,—particularly if he has a previous knowledge of the facts, without joining us in the conclusion, that the Paris physician has gained a complete victory over his adversary.

But we must repeat, sorry as we may be as Americans, that such should have been the result of this controversy, we are still more so that Drs Hosack and Townsend should, without any provocation on the part of Dr Chervin, have so gratuitously entered the arena against that gentleman, and drawn down upon themselves so complete a discomfiture. They could hardly expect that, after having been silenced on the subject of the yellow fever in their own country, they would meet with better success abroad, unless they depended on the effects of broad assertion on the minds of those members of both Academies who had not heretofore paid much attention to the

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points at issue, and were therefore little acquainted with the facts. But, as one of our contagionists could say in more senses than one—*tu l'as voulu George Dandin*. The defeat was of their own seeking; and we do not hesitate to declare, that every time any of our countrymen will meddle in matters that are not their own—every time they will write letters to prove what is not exactly correct—make use of abusive language about any members of the profession or of society at large, who enjoy the esteem of their fellow citizens and of innumerable foreigners—every time they appear unmindful, while abroad, of that self-respect which every individual owes to himself, or of the dignity of the nation to which they belong, and expose themselves, as one of Dr Chervin's antagonists is said to have done, to the reprimands of respectable natives with whom they come in contact; we shall feel little commiseration for them if they receive a severe castigation, be the castigator who he may. Under these circumstances we certainly will not condole with them; all we can do is to exclaim with Molière, *Que diable alloit il faire dans cette maudite Galère*. In the whole affair these gentlemen, and particularly Dr Townsend, appear to have imagined themselves, and to have acted as, the representatives of the medical profession of this country. Against such an idea we solemnly protest, and we beg the Parisian physicians, and the members of the Academy of Medicine and Sciences in particular, should they ever see these lines, to rest assured that Dr Hosack and Dr Townsend, in all their letters, publications and conversations, only expressed their own individual opinions, to which a very few physicians here will feel inclined to respond; and that if we were called upon to choose a representative to be sent abroad, he would very certainly not be selected from among the few contagionists that remain among us.

We have entered so fully on this remarkable little volume, which contains what may justly be called a chef d'œuvre of refutation, that we have little room left for the others whose titles will be found at the head of this article.

In the next publication Dr C. has treated his new adversary with a success equal to that he exhibited over the New York contagionists. Dr Lassie must be admitted to have offered a fine subject for the battering of his herculean antagonist, though we must say, that one circumstance detracts somewhat

from the honour which the latter has reaped on this occasion; —the feebleness of his opponent, and the consequent facility of the victory. In order to show this, and at the same time afford to our readers an idea of the kind of individuals Dr C. has to contend against, and of the nature of their views on the subject of the yellow fever, it will only be necessary to state, that Dr Lassis, who was at Barcelona sometime during the epidemic of 1822, and may be supposed, therefore, to have seen *some* patients labouring under the yellow fever, was at one period a partisan of the doctrine of *infection*, which he even contributed to promulgate by signing the manifesto published at Barcelona in 1822; some years after, and without having had further opportunities of observing the disease, he abandoned that opinion.

Our readers will suppose, probably, that M. L. having discovered the erroneousness of the doctrine of infection, adopted that of contagion; for, on the subject of the origin of the yellow fever, it has generally been found, that physicians who take the trouble to think for themselves, either lean on one side or the other of that question. But M. Lassis, on this point, has avoided the common track; and, giving up one side without embracing the other, thinks that the yellow fever is neither infectious nor contagious. He even goes so far as to maintain that the partisans of both doctrines have done much mischief. This important fact he communicated to the Academy of Sciences on the 10th November 1828, in reference to the fever then prevailing at Gibraltar. He stated at the same time, on his own authority,—and no authority could certainly be better, at least in his estimation, that the fever in question was nothing more than the common fever of Paris, and that to cut short the epidemic, the only thing necessary was to place matters in their natural state; that is to say, to renounce altogether the received system, that of clearing out the infected districts; the effects of which system were, according to him, the sole cause of the calamities the inhabitants were sustaining. The physicians of this country will know how to appreciate, to its just value, this remarkable discovery. Unfortunately for M. Lassis, Dr Chervin, armed with documents of the most conclusive kind, comes forward in the essay before us, and shows, that if such were the truth, the inhabitants

Chervin on Yellow Fever.

from their homes ought to have been the greatest errors; while he proves that of four thousand who were thus cruelly treated, none, except a few who returned imprudently to the town, had the disease. Dr C. even settles the affair of the young female who was taken sick on the summit of the rock several weeks after her last visit to the town: it was said by the contagionists that her disease was yellow fever, and that she had taken it from a soldier of the garrison; now Dr Chervin proves that the soldier was taken sick fourteen days before the girl, who recovered, and, as it would appear, never had the yellow fever. Dr C. cites many other instances besides that of Gibraltar, in which the extension of yellow fever was greatly lessened by the adoption of the plan M. Lassis condemns; and, on the contrary, many others, in which, *things being left in their natural state*, the mortality was excessive.

M. Lassis talks of the superiority of his documents (compiled, we should presume, from works already before the public,) over every other heretofore collected; of the sacrifices made in going to Barcelona in 1822,—sacrifices which he seems to regard as far greater than those made by Dr Chervin or any one else; of the advantageous results obtained by the application of his principles in various parts, and particularly at Paris, which he thus saved in 1825 from a visitation of plague or yellow fever; of his researches on the subject of this disease, which embrace every fact ancient and modern; of his work on the causes of epidemical diseases, which he regards as the most complete ever written; of his having done every thing; obtained the solution of the problem, &c. M. Lassis talks, we repeat, of all these circumstances in a strain which affords us no very exalted idea of his modesty.

Of the next publication before us we shall say little; not that it is undeserving of attention as a composition, but because Dr Castel, in answer to whom it is addressed, is not entitled to much respect, at least in what regards his opinion relative to the yellow fever. He may be cited as a fine illustration of that class of writers in Europe, who aspire to the honour of contributing to the settlement of a question of high importance, of which they know nothing except through the writings of others. It will be sufficient to state, that Dr Castel, in endeavouring to controvert, in an essay on contagion in febrile

diseases, some of the positions assumed by Dr Chervin, distorts most of the facts which lie in his way, or garbles them before calling them to the aid of his own views. He concludes, from such a collection of mutilated facts, that the yellow fever may become contagious in three different ways; by an increased development of the local causes which gave rise to it; by a peculiar state of predisposition of the individual, and finally, by the emanation that surrounds the patients. Dr Chervin follows him closely on all points, and refutes him in the most complete manner.

The last publication before us is deserving of more general attention, as presenting an *aperçu* of Dr Chervin's observations relative to the yellow fever which prevailed at Gibraltar in 1828. It was not originally the intention of Dr C. to publish this letter, because the report he is preparing on that epidemic will appear soon, and will present a much greater number of details. But Mr Monfalcon, to whom it was addressed, having communicated this letter to Professor Hecker of Berlin, who published a translation of it in his *Annals* for November 1829; and a truncated, travestied and imperfect version of this translation having been inserted in the number of the *Clinique* of Paris for 1st of May 1830, Dr Chervin was induced to publish the letter entire in several medical journals of Paris as well as in the present form.

We transcribed in our former article a few extracts from some letters addressed by Dr Chervin to one of the editors, in which this gentleman stated that he soon became satisfied that the fever of Gibraltar was identical with that he had observed in the West Indies and in this country: this opinion he reiterates in the publication before us. He states that the disease is the same whether in relation to the individuals it attacks, the mode of its invasion, its symptoms, march, termination, and the method of treatment it calls for. The only difference, he adds, is, that at Gibraltar the disease was less violent and rapid than it is between the tropics or in the southern states of this country. The post mortem examinations also revealed nearly the same morbid phenomena. Dr Chervin next states that all that had been said to establish the opinion of the importation of the disease from the Havana into

Gibraltar on board the Swedish vessel *Le Dygden* is erroneous, and presents an assemblage of absurd, ridiculous and contradictory statements. He presents a clear summary of the causes of the disease, and an exposé of its progress in the place. We have neither time nor space at present, to enlarge on those topics, which will be more properly taken up when we offer a review of the forthcoming Report which Dr C. is preparing. We must, however, be allowed to offer in termination the following extract from the publication before us.

"From the 11th of September to the 24th of December, both inclusive, the number of sick mentioned in the Report of mortality amounts to about five thousand four hundred, and from the same period to the 26th of December the number of deaths published by the public authorities amounts to about one thousand one hundred and eighty; whilst, according to an account made out daily by persons of veracity, the number of interments during the same period amounted to about one thousand six hundred and sixty. This difference arises doubtless from the circumstance, that many patients not having physicians, no declaration was made when they died. It is necessary, moreover, to deduct from these one thousand six hundred and sixty deaths those that were caused by other diseases.

"Out of three thousand seven hundred and eighty one men composing the garrison of Gibraltar, on the 1st of September 1828, four hundred and thirty-six fell victims to the epidemic, and are included in the number of deaths mentioned above. The mortality would doubtless have been much greater had not the wise precaution been adopted of encamping the troops beyond the western part of the rock, or where the air was contaminated; in other words, out of the infected district. From the moment this measure was adopted, the disease no longer attacked any other of the military than those whose presence the service unfortunately called for in the infected districts, either of the city or of the part of the rock called *the South*. Facts of this kind certainly do not prove the contagious nature of the disease."

* "If to this number we add the cases which occurred before the 11th of September and those which presented themselves after the 24th of December, we shall have a total of more than five thousand five hundred sick.

"We learn from the London Medical Gazette that according to Dr Barry five thousand five hundred and forty-three cases of the epidemical disease occurred from the month of August until Christmas, of which one thousand six hundred and thirty-one terminated fatally. (Note added in July 1880.)"

Dr Chervin continues to have our best wishes and those of innumerable friends in this country*.

ART. XIV.—PHARMACOPŒIA OF THE UNITED STATES.

The Pharmacopœia of the United States of America; by authority of the National Medical Convention held at Washington, A. D. 1830. John Grigg. Philadelphia, 1831; pp. 298.

The publication of the National Pharmacopœia of 1820 was an event in the medical history of the United States, the importance of which we can now appreciate more truly than at the time of its occurrence. It was then scarcely to be hoped that, in the short space of ten years, a work, marked with so much haste, superficial knowledge, and careless execution, would be supplanted by another characterised by accurate science, competent practical knowledge, extensive research, cautious discrimination and an almost faultless letter-press. The expectation of a revised and improved code, it is true, reconciled the profession in a great measure to the old Pharmacopœia,

* Since writing the above pages we have received from France a pamphlet entitled "*Précis Historique de l'Epidémie de Fièvre jaune qui a régné à Gibraltar pendant l'Automne de 1828; par M. PETER WILSON, Membre des Collèges Royaux des Chirurgiens de Londres et de Edinbourg; Traduit de l'Anglais et accompagné de Notes, par N. CHERVIN, D.M.P.*"

Mr Wilson's publication originally appeared in the London Lancet, from which it was taken by Dr Chervin. Mr W., at the time of the epidemic, had been practising his profession at Gibraltar for fifteen years, and had occasion to notice the first cases of the disease, both in his private and in his public practice. He is a firm and enlightened defender of the opinion of the local origin and of the non-contagious nature of the yellow fever. He was a member of the commission appointed by the government of the place to investigate the subjects of the origin and nature of the disease, and which was joined with that view to the members of the French commission. Disgusted, however, at the unfair manner in which his colleague, Dr Barry, conducted these investigations, and harassed by the frequent discussions which arose between them from this cause, Mr Wilson retired, and thus left the field to his opponents. His essay, and the notes and appendix, which Dr Chervin has added to his translation, deserve to be read by those who feel an interest in the philosophy of epidemical diseases.

Pharmacopœia of the United States.

duced its general adoption as the standard of the United States. It was justly thought that an imperfect and faulty standard was better than none, where so broad a basis was laid for its future improvement. The glaring errors and omissions, which that first attempt was distinguished, blinded us, in some degree, to the real merits which it possessed, and which are now made conspicuous by the corrections and improvements has received.

A principal feature of the American Pharmacopœia is the simplicity of the nomenclature, which appears to us to be founded on just principles. The pharmacist is conversant with drugs and medicines in their prepared state. He studies their properties and their sensible characters as objects of traffic and commerce, and his art should have its own appropriate terms. The classifications of naturalists, so important to him as fixing their identity, would be but a clumsy and inconvenient substitute for that more simple nomenclature which general use has sanctioned, and which the convention adopted. A comparison between the Pharmacopœias of Edinburgh and the United States will exemplify the correctness of these views.

We cannot do better in relation to this subject than to present the views of the convention, as expressed in the preface of the work before us. The remarks which we quote have relation only to substances of animal or vegetable origin; the chemicals being generally designated, as we conceive, with propriety, by the received scientific names.

"Three different methods of designating these substances have been in use. According to one method, the whole botanical name of the plant, together with the part employed, is expressed in the name of the medicine. Thus, *assa fetida* is called by the Edinburg College *Gummi resina ferulæ assæ foetidæ*, and jalap, *Radix convolvuli jalapæ*. This nomenclature, though perhaps the most exact, where the botanical characters of the plant are well ascertained, is exceedingly awkward and unwieldy in practice, and is moreover liable to the serious objection, that as the scientific names of medicinal plants, not hitherto thoroughly investigated or accurately described, are frequently changing with the progress of discovery, the pharmaceutical titles must also change, or, if they remain unaltered, must often mislead those not previously well informed.

"A second method, less objectionable than the preceding,

is to designate the medicine by one only of the two names of the plant, in connection with that of the part employed. Thus *assafetida* and *jalap* are respectively denominated, in the London Pharmacopœia, *Assafœtidæ Gummi-resina*, and *Jalapæ Radix*. But names formed upon this principle are also frequently of inconvenient length, and must change with the changing views of botanists; and, besides, the same substance is often derived from several distinct species, if not genera of plants, and the appellation is incomplete unless it designate all the sources of the medicine.

“The third method is to adopt one simple title, applicable under all circumstances to the medicine, and, though it may have been originally derived from the name of the plant, not necessarily changing with it; as, for example, *Aloe*, *Senna*, and *Serpentaria*. The advantages of this nomenclature are its brevity, practical facility, and comparative unchangeableness. In the terms *Senna* and *Serpentaria* we have examples of its superiority in this last respect. *Senna* was originally supposed to be derived from a single plant, the *Cassia Senna* of Linnæus: but the investigations of botanists have resulted in the discovery of several species which contribute to furnish this medicine; and in the most recent and best botanical works, the *Cassia Senna* has been separated into distinct species, under distinct specific names, among which that of *Senna* is not included. The almost insurmountable obstacle which is here presented in the way of the two first mentioned systems of nomenclature is wholly avoided by the last; for the term *Senna* may and will be used to designate the medicine, whatever changes the names of the plants may undergo from which it is obtained. The root, which is now universally denominated *Serpentaria*, is derived from at least two species of *Aristolochia*, besides the *A. Serpentina*; and as no difference is observable in its appearance or qualities as procured from these different sources, there can be no propriety in multiplying its titles. Such a multiplication, unavoidable in the systems which indicate the plant in the title of its product, is wholly unnecessary when a single definite name is applied directly to the medicine, without any necessary reference to its source.

“The Convention of 1820 very judiciously adopted the plan last mentioned, and designated the great majority of medicines of vegetable origin by a single Latin term, either employed in accordance with previous usage, or derived immediately from the specific or generic appellation of the plant. Thus *Assafœtida*, *Cinchona*, *Opium*, *Quassia*, &c., were terms in general use; *Gillenia*, *Juglans*, *Podophyllum*, *Spigelia*, &c., were the botanical names of the genera; and *Senega*, *Serpen-*

taria, *Azederach*, and *Toxicodendron* were those of the species. In some instances it was requisite to depart from this plan in order to avoid ambiguity; as when two medicinal plants of the same genus occurred, the specific names of which could not be appropriated to the medicine, and when two parts of the same plant were considered officinal. It was necessary in these cases, either to adopt an entirely new title, or in the former case to use both names of the plant, and in the latter, one of them in connection with that of the officinal portion. The latter alternative was preferred; and hence the compound titles *Mentha Piperita* and *Mentha Viridis*, *Stramonii Semen* and *Stramonii Folia*. When, however, a medicine had been long generally known by a name which also designated the genus of the plant, this name was retained without addition, though another medicine, also introduced into the Pharmacopœia, might belong to the same genus—the latter being distinguished by the full botanical title. *Gentiana* and *Gentiana Catesbæi* may be cited as an example of this kind; and *Cantharis* and *Cantharis Vittata* were admitted upon the same principle.

“Though the general plan of nomenclature originally adopted has been retained in the present edition, it will be observed that alterations have been made in particular instances. The Latin names have almost always been expressed in the singular number, even in cases in which, if the English language were considered a guide, propriety might seem to require the plural. Thus *Cantharis*, *Caryophyllus*, *Ficus*, *Galla*, *Limon*, *Prunum*, *Rosa*, *Uva Passa*, &c., are used instead of the plural of these terms respectively. The considerations, by which it is thought these changes may be justified, are, that the nomenclature is thus rendered neater and more uniform, and is brought into closer correspondence with the best classical usage. Celsus generally employs the singular number when speaking of any vegetable product as a medicine, though, under other circumstances, it might be designated by the plural. The terms *semen* and *flos* are always used by him as the medicinal titles of seeds and flowers; and the singular has not been introduced into the present work in any one instance, in which either the direct authority of this writer and of Pliny, or very close analogy with their practice, might not be adduced in support of it. The only pertinent examples of the plural to be found in the writings of Celsus are the words *folia* and *baccæ*, which he usually employs to express the leaves and berries of plants when considered medicinally; and his example has been followed in this as in the other case.

“In the adoption of English names, it was not deemed necessary to translate the Latin term literally; and that title was

preferred which custom, and the genius of the language appeared to sanction. Thus *Linum* is not translated into the corresponding English title of the plant, but into *Flaxseed*, which is the well known and universally received name of the medicine. On the same principle, *Fœniculum* is translated *Fennelseed*; *Ulmus*, *Slippery Elm Bark*; *Glycyrrhiza*, *Liquorice Root*, &c. Nor are the English names always necessarily in the same number with the Latin. Though we may correctly say *Caryophyllus*, *Galla*, *Prunum*, and *Rosa* in the Latin language, the genius of our own requires that these terms should be translated *Cloves*, *Galls*, *Prunes*, and *Roses*.

"Another peculiarity in the nomenclature of the present Pharmacopœia is the introduction of well known and current synonymes, whenever the officinal title may not from its novelty be well understood, or the medicine which it represents not readily recognised without reference to the name by which it is usually called. Thus the meaning of *Sodii Chloridum*, *Potassii Iodidum*, *Liquor Ammonizæ Hydrosulphatis*, and *Ferri Ferrocyanas*, is fixed by the use of the more familiar terms *Sodæ Murias*, *Potassæ Hydriodas*, *Ammonizæ Hydrosulphuretum*, and *Ferri Prussias*; and the identity of *Mel Scillæ Compositum* with the remedy popularly known as *Hive-syrup*, and of *Tinctura Rhei et Sennæ* with *Warner's Gout Cordial*, is rendered evident by the introduction of both titles. To prevent misapprehension, the synonymes are distinguished from the proper officinal titles by being printed in a smaller type, and placed in a secondary position.

"While on the subject of nomenclature it may be proper to mention, that, in the Latin titles, the name of the base in every compound chemical term, and that of the plant in those which refer to vegetable products, are placed first in order, both from the impression that such a relative position accords best with the genius of the Latin language, and from the greater facility which it affords in the alphabetical arrangement. Thus *Sodæ Sulphas*, *Zinci Oxidum*, *Sodii Chloridum*, *Colchici Radix*, *Stramonii Folia*, &c. are employed as here represented, not in the reverse order sometimes adopted. Exceptions to this rule are afforded in the nomenclature of several substances, the titles of which belong to pharmaceutic classes, as the Oils, Extracts, Infusions, Tinctures, &c., in which the name designating the character of the preparation has the precedence; and the same end of facility of alphabetical arrangement is promoted by this deviation from the general plan."

These details may appear somewhat tedious, yet we think they are not beneath the attention of the accomplished physician. Precision and classical purity in prescribing extemporaneous

formulæ are by no means traits of the American physicians, and we should be glad to see them err on the side of fastidious refinement rather than of loose and awkward expression. They would thus greatly advance the interests of pharmacy, by compelling the apothecary to study his business as a science; and the habit of minute accuracy, when once formed, would be found to be of incalculable importance in weightier matters.

It would be doing an injustice to the convention not to quote at length that part of the preface which is devoted to an explanation of the principles which have guided it in the present revision.

“The *Materia Medica* is arranged in two distinct columns, the first of which presents a catalogue of the standard simple medicines, of the preparations not made by the apothecary, and of all those substances, not strictly medicinal, which are introduced into the formulæ of this *Pharmacopœia*. The terms employed in this catalogue are, with the exception of a few synonymes, the official titles of the substances severally designated, and are used in all other parts of the work where these substances are referred to.

“In the second column are various accessory matters and explanatory observations, intended chiefly to give precision to the official terms. Opposite to the name of each medicine of organic origin, is the systematic title of the particular plant or animal from which it is derived, with a reference to some standard authority, and to the part of the plant or animal employed. In giving these systematic titles, the most important botanical and zoological synonymes have also been presented, that which is placed first in order being considered of the highest authority. When the same substance is derived from two or more plants or animals, these are usually indicated; and their names, being connected by the copulative conjunction, may be readily distinguished from such as are intended merely as synonymes. When different opinions are entertained relative to the source of the remedy, the circumstance is expressed by connecting the names of the plants by the disjunctive conjunction. Much care has been taken to render this part of the work as correct as possible, and many errors and omissions existing in the first edition have been corrected or supplied. Strict attention has been paid even to the accurate quoting of authority; and not a single work which was readily attainable has been referred to, without having been previously consulted with a view to such reference.”

“The possession of a supplementary catalogue or second-

any list of medicines is a peculiarity of the old Pharmacopœia, which, as it appears to have had its origin in just views, and is certainly very convenient, has been retained in the present. Its chief advantage is, that it keeps in the view of the profession numerous medicinal substances, which, though their reputation is not sufficiently established, nor their employment sufficiently general to entitle them to rank with the standard remedies, are nevertheless not altogether unworthy of notice. Such a catalogue may be considered as a place of probation, in which newly proposed remedies may be introduced, and remain till experience shall have established their claims to a higher station, or have proved them utterly worthless; and to which remedies, which have been in general use but have lost their credit, may be consigned to await the judgment of the profession, when the influence of fashion may be no longer exerted against them.

“Every substance, however inefficient in itself, which is employed in any pharmaceutic process, acquires from this circumstance an importance which entitles it to rank with those remedies accounted strictly officinal, and no such substance, therefore, is to be found in the secondary list. This remark is perhaps necessary, as the reader, if not aware of the motives for placing certain substances among the standard medicines, might conclude, that great injustice had been done to many which are stationed in the secondary list, by the preference given to others having apparently much less claim to favourable notice.”

“One of the most prominent defects of the original Pharmacopœia is a want of uniformity both in the manner of conducting the processes, and in the style of describing them, arising from the various sources from which the materials were drawn, and the want of due time so to remould and shape them as to enable them to unite together in one harmonious whole. Even the titles do not sufficiently correspond; and the work is altogether deficient in that unity of character, which is especially desirable in every production having the authority of a national standard. An effort has been made to supply these deficiencies, so far as language is concerned, by first adopting one general style of latinity, and then remodelling the phraseology of each process, so as to bring it into conformity with that style. Upon a thorough examination of several Pharmacopœias, and a comparison of each with the best medical writers among the Romans, the work of the London College appeared to approach most nearly to classical purity, and was accordingly adopted as a model in the present revision, though a servile adherence to its authority has been avoided. The Pharmacopœia, having been writ-

ten out in the Latin language, was subsequently translated into English; and it follows, that, if success has been attained in the endeavour to stamp a character of uniformity on the style of expression in the former language, a similar result must have been obtained in the latter. The above remark will account for numerous verbal alterations, which, considered by themselves, without reference to any general plan, might seem to have been made from a desire rather of change than of improvement.

“In the selection of the process for each preparation, the same wish for uniformity has had an influence in producing many alterations. Two principles have governed the choice of formulæ independently of intrinsic merit; which, when superior, has always been allowed a predominant influence. When two or more methods of preparing the same compound, equally meritorious in themselves, have come under consideration, that has been preferred which united in its favour the widest prevalence in this country, and the sanction of the majority of the British Pharmacopœias. These circumstances have often occurred in connexion; for before the publication of the American Pharmacopœia in 1820, those of the British Colleges were the standards generally followed; and it has not unfrequently happened, that when the process adopted by the first American Convention was taken from one of these Pharmacopœias, with the authority of the others against it, the medical and pharmaceutical professions among us have adhered to that most extensively recognized abroad. It is highly desirable that uniformity in the preparation of medicines should every where prevail; for the benefits, accruing from the mutual interchange of the medical writings of different civilized nations, must be greatly affected by any material difference in the nature or composition of the remedies employed. This remark is especially applicable to Great Britain and the United States, and to all countries where the English language is generally used. It is a duty, therefore, which we owe to the cause of pharmacy to throw our own weight into that scale which already preponderates, and thus contribute to the production and maintenance of the desired uniformity. As the London Pharmacopœia is most widely circulated, and exercises the greatest influence, the changes introduced have frequently been in accordance with that work; and it has happened fortunately that merit has usually been on the side of authority. Where the three British Pharmacopœias have been united against our own, without any decided superiority of practical advantage in our favour, no hesitation has been felt in according with the former.

“Many of the changes, which have been made in this edi-

tion, were rendered necessary by pharmaceutic errors in the original. Some of the processes were upon trial found to be impracticable, and many others defective, from a want of due attention to the distinction between weights and measures, in transferring the formulæ of the Edinburgh Pharmacopœia into that of the United States. Other alterations were the necessary consequence of improvements to which the industry and zeal of pharmaceutists, as well in this country as in Europe, have given rise, and of the new light which has been thrown on the science generally since the publication of the first edition. These alterations are interspersed throughout the work, and are too numerous to be noticed individually in this place. Among the processes materially modified, may be mentioned those for Hydrocyanic Acid; Spirit of Nitric Ether; Tartrate of Antimony and Potassa; Camphor, Cinnamon and Mint Waters; Plaster of Carbonate of Lead; Aromatic Syrup of Rhubarb; and Syrup of Sarsaparilla. A few preparations have been omitted, either from the failure of the processes to answer the intended purpose, or from having been superseded by others, analogous in their character, but less objectionable in their mode of formation. *Acetum Purificatum* is an example of the first, *Acetum Opii* of the second. The former is useless; the latter is unscientific in the directions and uncertain in the result, and has been rendered unnecessary by the introduction of the Acetate of Morphia and Acetated Tincture of Opium. Several preparations have also been excluded, because entirely out of use; and some have been transferred to the *Materia Medica*, as they are almost always procured from the manufacturing chemist, seldom if ever made by the apothecary.

“Within the last ten years several remedies have been introduced into notice, or, if known previously, have acquired a more extensive reputation; and some of them, having been generally adopted by the medical profession, had good claims to a place among the officinal preparations. For these it was necessary to draw up new formulæ, in the preparation of which care was taken to consult the best authorities, and in several instances to submit the processes to the test of actual trial. Among these are the formulæ for Iodide of Potassium, Sulphate of Quinia, and Morphia with its Acetate and Sulphate.

“Finally, with regard to the Preparations it may be remarked, that whatever was suggested, either in the way of amendment or addition, by a perusal of the British Pharmacopœias, the French Codex, and some other works of authority, was without scruple appropriated in preparing the present revision, when not too much in opposition to the modes

of practice prevalent among us, or likely to overburthen our comparatively infant pharmacy. In a work of this kind, intended solely for practical purposes, originality should never be sought after at the expense of utility; and it would be the height of folly to reject the riches accessible to us, because they were not dug out of our own mines."

There is much good sense in these observations, and the performance of the convention has not disappointed our expectations.

It is not to be looked for that the selection among various recipes for the preparation of the same medicine will always fall upon one that shall give universal satisfaction. The conditions which ought to be fulfilled in the choice are, that the formula be chemically correct; that it be concise and perspicuous; the active principle unincumbered with useless adjuncts; and, other things being equal, that it be the one most generally in use.

In examining the list of *materia medica*, the first change that caught our attention was in the definitions attached to the names in the second column. For example gum arabic, ammonia, assafetida, benzoin, guaiacum, manna, opium, burgundy pitch, &c. are each called "*succus concretus*." They undoubtedly are such, and leaves, and roots, and barks, are *parts of plants*; which latter designation appears to us as appropriate in its place as the former. The old pharmacopœia defined these substances with more precision and with great propriety in most cases. Gum, the gum resins, resin, guaiacum and the balsams are well defined proximate principles in the vegetable kingdom; they convey by a single word a clear idea of the peculiar properties of the substance and are fully entitled, we think, to a place in the definitions of the *materia medica*.

There is a looseness in this nomenclature to which not even the authority of the London College can reconcile us, and which must, we think, strike the most careless reader. Thus camphor, castor, spermaceti and musk are defined to be *concretum sui generis*; while on the other hand a strict definition is given of many substances, pointing out their peculiar origin and the manner of obtaining them. The convention appears to us to have deviated in these cases from its own principles, which would dictate, that where the concrete is a

peculiar proximate principle, as camphor, &c. its chemical name should be designated, and where it is marked by some peculiarity in its origin, as castor, musk and spermaceti: this should be concisely defined, in the same manner as the oil of cloves is said to be the volatile oil of the flower buds of the clove tree, and neatsfoot oil the oil prepared from the bones of the *bos domesticus*.

We observed that lupuline is said to be *strobilorum pollen*, and although we presume the convention would say that pollen in its classical acceptation means fine flour or dust, we cannot admit this to be a legitimate use of the word. The term pollen, when used in speaking of plants, is strictly technical and should be restricted to the fructifying dust of the anthers. Neither is the lupuline to be regarded as a powder. It is a resinous exudation from the base (probably the nectaries) of the scales of the strobile and only becomes a powder by being dried. Were we disposed to be over critical we should object to defining galls to be the *nest* of the cynips. The word does not convey the proper idea, although it would not be easy to substitute one in its place.

The convention has bestowed great care and labour upon the botanical nomenclature of the materia medica, and this part of the work may be advantageously compared with any foreign pharmacopœia we have seen. The best modern authorities have been consulted, and the drugs, the origin of which was not designated in the old edition, are here referred to the plants from which they are produced. Thus colombo is now known to be the root of the *cocculus palmatus*, and myrrh an exudation from the *balsamodendron myrrha*. The names of various genera and species are also rectified in the present edition, and the authorities on which the reference is made are given in all cases. The red and pale cinchonas are the only medicines the species of which are not designated; and in this case it is making real progress to clear away the errors of preceding writers. It is now well ascertained that Mutis was not acquainted with the cinchonas of Peru, and that the species which have been supposed on his authority to yield the best pale and red barks afford only the *inferior* barks of Carthagena. We have also to commend the introduction of many new articles of the materia medica, among which we may

Pharmacopœia of the United States.

erate Pyroligneous Acid, Iodine, Rhatany Root, Lupule, Hemlock Pitch, the Rosa Gallica, the Medulla of the safras, Acetate of Soda, and Taraxacum. The reader, who will compare this department of the Pharmacopœia of 1820 with the same in the present work, must be struck with the minute attention which has been bestowed upon the revision; for there is not a page of the Materia Medica but has been greatly improved. Both the English and the Latin descriptions (with a few exceptions) are more precise, the references to authorities are more copious, and whatever may be the progress of science, the future revisers of the Pharmacopœia will find that the late Convention has removed the principal difficulties of their task, and that they will have little to do but incorporate into their work the discoveries of the day.

It is under the head of Preparations that the greatest improvements and changes have been made. We refer to this part of the work with a feeling of pride, as conclusive evidence of the great progress of the science of pharmacy during the last ten years in this country. To enumerate all the improvements of the Convention in this department would swell this article to an unreasonable length, and we must therefore content ourselves with a brief sketch of the changes introduced.

Among the omitted articles we enumerate purified vinegar, the black drop, the soda muriate of gold, all the preparations of antimony except tartar emetic, the precipitated sulphate, and the wine; the whole section of collyria, the amalgam of tin, &c. The sections of pills, infusions, and mixtures have also been much shortened. There is scarcely a formula in the work of which the language in which it is expressed, the proportions of the ingredients, or the process for the preparation, have not been revised and improved. In place of the black drop a dilute acetated tincture of opium of a constant strength is introduced; "purified vinegar" is supplied by "diluted acetic acid;" and the strong acetic acid is added to the preparations.

The formula of Vauquelin has been adopted for the preparation of hydrocyanic acid, and it is perhaps the best which

is in use. The physician who undertakes to prepare it by this mode should be aware that a considerable quantity of hydro-sulphuric acid gas is required for the complete decomposition of the cyanide, and should not venture to use the acid without ascertaining that there is none of the salt remaining undecomposed.

The formula for spirit of nitric ether, which has been adopted by the Convention, has been in general use for many years, by practical chemists, and is a great improvement in point of safety and economy, upon the old formula.

The hydro-sulphate of ammonia is no longer the disgrace of our Pharmacopœia; the gas is now directed to be made by the action of dilute sulphuric acid on sulphate of iron.

The Convention has adopted the Dublin formula for the preparation of tartar emetic, which Henry of Paris, a competent judge, has pronounced, after careful examination, to be the best extant.

It has also made a judicious alteration in the antimonial wine, by adopting the proportions of the London and Edinburgh colleges, viz. two grains to the ounce, and using the best wine in place of wine and water.

An improvement has been made in the manner of dissolving essential oils in water. They are first triturated with magnesia, and by this means a saturated solution is obtained with great quickness and certainty.

Among the most important additions to the work are morphia, its acetate and sulphate. The directions for these preparations are clear, full, and protracted; the process is simple and may be performed with complete success upon a few ounces of opium.

We are glad to perceive that the old and clumsy formula for the preparation of the sub-acetate of lead is changed for one founded upon just principles.

The iodide of potassium is introduced, and a good formula for its preparation is given. As this requires hydro-sulphuric acid gas to be passed through the solution, we are inclined to prefer the formula which directs a hydriodate of iron to be made, and then decomposed by the carbonate of potassa. We thus get rid of the necessity of preparing an offensive gas, and perform the operation with equal facility.

Sulphate of quinia is another remedy of prime importance, which has been introduced within the last ten years. The rule laid down for its preparation is that in use by our large manufacturers, and is sufficiently explicit for all practical purposes.

Under the head of syrups we notice several important alterations, viz.; the introduction of syrup of gum arabic and the improved recipes for preparing the syrups of garlic ginger, sarsaparilla, and the aromatic syrup of rhubarb. The improvements in the last two, more especially in the syrup of sarsaparilla, will be appreciated by every skilful apothecary.

The tincture of opium is made to correspond with the formula of the London College, the proportion of opium being changed from an ounce to an ounce and a quarter in the pint.

Neatsfoot oil is directed to be used in the preparation of the ointment of nitrate of mercury, it being found to form an ointment which does not become hard and brittle with age.

Among the many minor improvements of the present *Pharmacopœia*, it may be noticed that that of 1820 simply directed the substances which were to be made into pills to be beaten together until they formed a mass, whereas, in the work before us, the number of pills which are to be made is given in every instance. The old *Pharmacopœia* was drawn up with very little regard to symmetry. The quantity of a decoction or infusion, ordered to be made at once, varied without any apparent rule; of some, half a pint, and of others a pint, a pint and a half, or a quart. Ointment of stramonium was ordered to be made in quantities of fourteen pounds at a time, while a single drachm of acetate of zinc was the product of each operation for preparing that salt. In the present work these faults are very properly corrected. A pint of a decoction or infusion is in almost every case directed to be prepared, the quantity of stramonium ointment is reduced to three and a half pounds, and that of acetate of zinc increased to six ounces.

We congratulate the medical profession throughout our country upon the appearance of this excellent and judicious publication, which will raise our reputation abroad, and give an additional impulse to that spirit of pharmaceutical research

which has been awakened, in degree at least, by the influence of the Philadelphia College of Pharmacy. To institute a comparison between it and the Pharmacopœia recently prepared in New York, is altogether unnecessary. If they are to stand or fall by their merits, the *publishers* will soon ascertain their respective value, and we trust that the compilers of the latter work will have the candour to acknowledge the great superiority, in all points, of the Washington Pharmacopœia. We regret sincerely the difficulties that have arisen, and admitting that there were informalities in the meeting and organization of both conventions, we trust that the superior accuracy and scientific elegance of the work we are reviewing, will unite the suffrages of the American physicians in its favour, and accord to it that authority to which it is so well entitled.

QUARTERLY SUMMARY

OF

MEDICAL AND SURGICAL INTELLIGENCE.

I. PHYSIOLOGY.

1. *On Pulmonary Absorption and Exhalation.*—M. Collard de Martigny has lately made a series of experiments, with a view to ascertain more fully and exactly some of the points which had not been settled in relation to the respiratory function, and particularly to determine what becomes of the oxygen absorbed in respiration, and what part is taken in it by the azote.

The author establishes that a certain part of the oxygen taken in by respiration is consumed, and that a quantity of carbonic acid is formed. But what becomes of this oxygen? He does not admit that the generally received theory is true, but says that the oxygen is absorbed in the lung, and acts on the blood while in that organ, as is proved by the immediate changes observed to take place in that fluid, which passes out from the lung endowed with all the properties and characters of arterial blood,—the change, therefore, must be effected in the lung itself.

But there is a discharge of carbonic acid, at the same time that there is a disappearance of oxygen; does this carbonic acid owe its existence to the oxygen that disappeared? M. Collard shows that there is not an exact proportion between the oxygen lost and the carbonic acid discharged, and concludes that the exhalation of the latter is independent of the absorption of the former; and that the acid is brought to the lungs by the venous blood. These facts result from the experiments of M.M. Nysten, Coutanceau, and Edwards, some of which have been repeated by M. Collard de Martigny.

M. Edwards caused frogs, kittens, &c. to breathe in pure hydrogen, and although the vessels containing the hydrogen did not contain any oxygen, the respiration of the animals produced such a quantity of carbonic acid as to remove all doubts in relation to its independence of the oxygen respired.

M. Martigny substituted azote for the hydrogen, and came to the following conclusions:—

The first portion of air examined (after the experiment) always yields rather more carbonic acid than the rest.

The two or three succeeding portions produce nearly equal quantities.

The last, and sometimes the last but one, contains less; which is easily accounted for by adverting to the stupor of the animal and the feebleness of the respiration.

Lastly. The sum total of carbonic acid produced is smaller than it is stated to be by M. Edwards.

The editors of this Journal beg leave to remark that only a small part of the air contained in the lungs is changed at every act of respiration—that a much

larger quantity is contained constantly in the lungs than is taken in and breathed out again by one single respiratory act. Suppose the entire amount of air in the lungs be expressed by 200, and the quantity thrown out by each expiration to be 30, it will follow that at least 170 will be always contained in the organ. Now is it not possible that the oxygen of the 170 may give rise to the production of the carbonic acid noticed by M. Martigny. It should be observed that the first portions expired contained more and the last less of the acid, which may be referred rather to the consumption of the residual air of the lungs being more nearly completed in the last than in the first stages of the experiments. M. Martigny regards these experiments, however, as showing conclusively that the exhalation of carbonic acid continues long after the inspiration of oxygen ceases.

A tube, thirty-five or thirty-six inches high, open at one end and slightly curved, was filled with mercury, and a barometric vacuum formed. To the open end of the tube was attached the crural artery of a dog, previously dissected and cut off. The artery was kept closed by a pair of forceps. By forcing the blood along with his finger, it passed into the tube and rose above the mercury. After leaving the apparatus *in situ* for an hour, it was removed and its contents received under mercury, a small quantity of blood passing into the receiver along with the gas. The gas was entirely absorbed by potassa. He was surprised at the smallness of its quantity, considering the extent of the vacuum produced in the tube—which shows that the vacuum was produced by the vaporization of the serum.

The author repeated this experiment several times, and deduces from it the opinion that the blood does not contain free oxygen, but that that substance is really united and identified with the blood in the lungs, and that there can be no ground for supposing that the carbonic acid contained in the azote in which animals had breathed, is the product of preceding inspirations of oxygen; but, on the contrary, that the carbonic acid exhalation is a fact independent of absorption of oxygen in the lungs.

M. Martigny thinks that it happens in the lungs as in the alimentary canal, on the mucous surface of which are effected various absorptions and exhalations at the same time.

M. M. compared, by means of the barometer tube already mentioned, the quantity of carbonic acid in venous, with that in arterial blood. From four careful experiments he concludes, that the quantity of carbonic acid in venous is to that in arterial blood (in rabbits) as four to two. This difference goes to show that the venous blood must have parted with its gas in the lungs—therefore, if the respiration should in any case be interrupted, we ought to find the arterial blood containing a larger proportion of the acid.

He opened the trachea of a rabbit, and by means of a tube sucked or exhausted all the air he could get out of the bronchia. He then tied the trachea so as to prevent any more air from entering the lungs, and after a few minutes subjected the venous and arterial blood each to the test. The result of the trial showed that they contained nearly an equal quantity of carbonic acid.

From his experiments the following summary is deduced:—

1. That respired oxygen combines with the blood in the lungs.
2. That there is not an exact proportion between the oxygen inspired and the carbonic acid exhaled.
3. That the exhalation of carbonic acid continues long after the absorption of oxygen has ceased to take place.
4. That venous blood contains free carbonic acid; and that arterial blood contains about one-half less.
5. That in traversing the lungs the blood loses a part of its acid.
6. That if an obstacle be placed in the way of the expiration this loss does not take place, but its quantity does not sensibly increase in the venous, while it is nearly doubled in the arterial blood.

M. Collard de Martigny therefore supposes, that the absorption of oxygen in the lungs is a part of the function of general nutrition, and the exhalation of carbonic acid is merely the excretion of a gas secreted by the lungs.

An opinion has been entertained, and defended recently by M. Despretz, that a portion of the oxygen absorbed unites with the hydrogen of the venous blood

to form water. M. Martigny shows, that if hydrogen and azote should meet in the lungs under circumstances favourable to the oxydation of the hydrogen, a part of this gas would also pass into the state of ammonia, by combining with the atmospheric air; that every thing that can be alleged in favour of the formation of water is equally applicable to the composition of ammonia; there is the contact of the elementary gases, a nascent state of one of them, temperature, electricity, the analogy drawn from inorganic chemistry and the decomposition of vegetable and animal substances.

But, from numerous experiments performed, it is proved that not a trace of ammonia exists in the matter of the pulmonary transpiration. The production of this fluid cannot therefore be attributed to the oxydation of hydrogen. And besides the pulmonary halitus remains about the same *ceteris paribus*, whether the animal respire in atmospheric air or in azote. The quantity of the pulmonary halitus is found (by experiments) to vary according to the quantity of air inspired, the number of respirations, the temperature, &c. upon principles very similar to the laws of common evaporation; whence M. M. concludes, that the halitus is deposited upon the bronchial surfaces by exhalation and then vaporised and excreted.

By means of experiments in which he isolated the azote exhaled or absorbed by the skin, the digestive tube, and the lungs, M. M. found that the quantity of the azote exhaled is very variable, and seems connected with the proportion of carbonic acid.

We shall not extend this article any further than to exhibit M. Martigny's general statement of the results obtained, or supposed to be obtained by him.

1. There takes place in the lungs both *absorption* of oxygen and *excretion* of carbonic acid, azote and serosity; *inhibition* of oxygen and azote, and *exhalation* of azote and carbonic acid.

2. The two first named acts constitute the function of respiration; the others are common to all the organic surfaces.

3. The oxygen absorbed in the lungs combines there with the blood, and does not circulate as free oxygen.

4. The carbonic acid expired is a product of the *assimilated decomposition*, *secreted* in the capillaries and *excreted* by the lungs.

5. The azote expired appears to be a *secretion* from the blood itself, effected *instantaneously* in the lungs.

6. The respiratory serosity is deposited on the pulmonary surface by *organic exhalation*, and dissipated by *evaporation*.

7. Lavoisier's chemical theory of respiration is a gratuitous hypothesis.

8. This function ought to be regarded as a complex series of acts of the general assimilation.—*Archives for October, 1830.*

2. *Animal Electricity*.—At the sitting of the Royal Academy of Sciences at Paris, 25th of October, Dr Person read a memoir on animal electricity, and on a new instrument intended to show instantaneous electric currents. Among the conclusions to which the author has been led are the following:—1. It is not necessary for the electric current to pass along the whole nerve to produce muscular contractions; the shock takes place no matter how small the extent to which the nerve has been traversed. 2. The existence of electrical currents in the nerves during life is a gratuitous supposition. 3. The only well ascertained case of animal electricity is contrary to this hypothesis. 4. The commotion excited by fishes, called electrical, is really due to electricity.—*Archives, Nps.*

II. PATHOLOGY.

3. *Endemic Parotiditis*.—In the concluding number of the *Journal Universel*, we meet with an account of parotiditis which occurred endemically among the soldiers of the first regiment of light infantry during their stay at Mont-Louis,

Eastern Pyrenees, in 1828, from the observations of Dr Dongy, surgeon-major of the regiment. The disease was first observed among the recruits who arrived in the month of November 1827. In the beginning of January following, of the eight hundred men who constituted the garrison of Mont-Louis, eighty-three had become affected. The disease was one to which the inhabitants of the place were unaccustomed, and Dr Gambus, the only physician of the city, had never met with a case of it during a practice of thirteen years. Notwithstanding the number of patients who were attacked with this complaint very few died. Metastases were frequent, but the affection of the parotids was in no instance complicated with exanthemata or petechia. The medium duration of the disease was from eight to twelve days. Nothing remarkable was observed in regard to its termination, if we except its frequent metastasis to the testicles. In a single case, in which it was complicated with otitis, it pursued a chronic course, notwithstanding the employment of warm drinks, antiphlogistics, &c. The period of incubation was marked by general uneasiness, lassitude, pains in the limbs and loss of appetite. Fever was seldom present. The duration of this period was from two to four days: a swelling now occurred in the region of one or both of the parotids, and extended itself frequently to the whole of the anterior part of the neck. In sixty-nine cases the disease affected both parotids, and in eighteen only one of them. As already mentioned, metastasis to the testicles was frequent; in four instances inflammation occurred in both testicles subsequently to an affection of both parotids; and in twenty-three cases but one of the testicles became the seat of inflammation. The testicles thus affected were all atrophied, as was ascertained by an examination made several months after the removal of the disease. In a solitary case the testicle of the opposite side from that on which the parotiditis was seated became inflamed. Dr Dongy never saw a case of metastasis from the testicle back again to the parotid gland, nor did a sudden cessation of the inflammation of the latter ever give place to any other affection than that of the testicle. Dr D. has also assured himself that two only of the patients had previously been affected with inflammation of the parotids. In no instance did suppuration occur either in the neck or in the testicles. The individuals in which the disease occurred were from twenty-two to twenty-eight years of age; one only beyond the latter age was affected, this was a soldier of thirty-two years of age. Of those attacked with the disease the greater part were recruits who had arrived at the garrison about six weeks before it made its appearance. Dr D. is convinced that the exciting cause of the inflammation was fatigue conjoined with exposure to cold and dampness. The soldiers of the garrison were exercised during the months of December, January, and February in galleries exposed to currents of wind, and in which there was a considerable quantity of snow; after exercising they returned immediately to their apartments, where they were crowded together in a temperature frequently of very considerable elevation: from these they were again called forth, either to recommence their exercises, or to form roads through enormous masses of snow. The place of birth Dr D. believes to have had some influence in predisposing to the attack of parotiditis: thus of those who were affected with it thirty-six were from the upper Pyrenees, twenty-four from the lower Alps, eighteen from Corsica, six from Var, two from Ardennes, and one from Calvados. All were of a sanguine temperament and of a fine constitution. Almost all were from warm, dry and mountainous situations, which they exchanged for one of the most elevated points of the Eastern Pyrenees, where the cold reigns during the whole year, and where, during eight months of the twelve, heavy snows are the cause of a very great degree of humidity. The disease, also, was most common in those soldiers who slept near the doors or windows, and especially in such as were intemperate in the use of wine. The latter constituted two-thirds of the entire number affected.

4. *Ischuria Renalis*.—The following case is copied from the fifth volume of the Transactions of the Medical and Physical Society of Calcutta, in the January number (1831) of Johnson's Review. *Ischuria Renalis* is a very unfrequent but very dangerous disease. Many medical men, of extensive practice, have never once

seen it. When met with, it is not always that a post mortem examination is obtained.

The patient in the present case was an invalid of the garrison of Tannah, in the East Indies, aged fifty years, who was admitted into the regimental hospital on the 18th of October 1818, complaining of paucity of urine; not more than a small tea-cupful in the twenty-four hours being voided. He had nausea, but no fixed pain in any part. When first attacked, several hours before admission, he experienced some uneasiness in the lumbar region, attended with vertigo. He was ordered a dose of castor oil, and afterwards a draught with tincture of opium and nitrous ether. On the second day there was no alteration in the symptoms. The draught was several times repeated. On the third day the sensorium appeared much affected, as marked by drowsiness, unsettled state of the mind, and loss of memory. His eyes were suffused, yellow, and slightly injected; pulse slow and full; some convulsive motions of one arm. The catheter was introduced into the bladder, but no urine was found there. He was bled to twenty ounces, took four grains of calomel, with the same quantity of antimonial powder, and then had a blister to the lumbar region. The blood was cupped, and slightly buffed. *Fourth day.* Less affection of the sensorium; no increase of urine; a brisk purgative was directed, with a blister to the nape of the neck. *Fifth day.* Sensorial disturbance increased; great drowsiness; tongue brown and hard; purgative medicines produced no effect. *Sixth day.* Coma continues to increase; bowels obstinately confined. The patient died on the next day.

Dissection.—The stomach was much thickened, and its villous coat very vascular. The liver was enlarged; it displaced the intestines, and had elongated the mesentery. The spleen was enlarged to five times its natural size(?), and was very firm. The colon was contracted throughout its whole extent. The kidneys were enlarged to double their usual size, and were much altered in structure, having the pelvis unnaturally small, and the mamillary processes so changed as to be with difficulty recognised from the general mass of disease. The impression on Mr Bird's mind (the gentleman by whom the case is reported) was, that the urinary secretion must have been imperfect for a length of time. In the head, there was a general serous effusion throughout the substance of the brain, and into the lateral ventricles. No mention is made of effusion having taken place in any of the other cavities or into the cellular tissue. Mr Bird is disposed, but we cannot see upon what foundation, to connect *ischuria renalis* with liver affection rather than with organic disease of the kidneys.

5. *Hæmatopedesis.*—A case of this curious affection is related in a memoir of M. Chauffard of Avignon; read before the Medical Society of Paris in October 1830.

A girl of twenty-one years of age, affected with irregularity of the menses, having a brain but slightly developed, and feeble intellect—of an indolent and obstinate disposition, was chagrined by the reproaches of her parents, in consequence of her having renounced the protestant religion. She left her home, and sought an asylum with various persons; finally she was admitted into the hospital. She was at the time of her admission subject to regular attacks of hysteria, marked by general convulsions, extreme sensibility of the pubic and hypogastric regions, a sense of strangulation, hiccough, sighs, &c.

When the attack of hysteria was violent and continued from twenty-four to thirty-six hours, the patient passed into a kind of extacy—the eyes becoming fixed and without any appearance of intelligence, and the movements of the body defective and automatic: the patient occasionally muttered prayers, and an exudation of blood took place on the cheeks and the epigastrium. The whole of the sub-cutaneous capillary tissue in the parts at which the hemorrhage took place was injected, the skin being of a bright red and covered with vascular arborescences. The hemorrhage recurred whenever the paroxysms of hysteric catalepsy continued for any length of time. The patient continued in the state here described nearly three months; her disease was treated at first, without success, by local depletion from the head and the genital organs; it ceded finally

and "with great rapidity to repeated revulsive bleedings and to other revulsive means."

6. Effects of Posture on the Pulse in Health and Disease.—The fifth volume of the Dublin Hospital Reports contains a very interesting paper by Dr Graves "On the Varieties produced by Posture in the frequency and character of the Pulse in Health and Disease." For the following analysis of the author's observations we are indebted to the Ed. Med. and Surg. Journ. for Jan. 1831.

It is known that considerable variety, both in strength and frequency of pulse, is observed in the erect, the sedentary, and recumbent posture. Dr Thompson of Edinburgh first pointed out some of these differences from an extensive series of accurate observations; and these were confirmed by Dr Stroud in the numerous experiments made by him on the patients of the clinical wards in the years 1816 and 1817. Unaware of these experiments apparently, Dr Graves has, with extreme diligence, devoted himself to the observation of the varieties of the pulse, not only in the erect and recumbent posture, but in the inverted, with the feet above and the head dependant. The author found, however, that this position produced much less effect than he anticipated. The frequency of the pulse in this position was neither retarded nor accelerated; but its strength was diminished, sometimes very considerably, and occasionally it became very irregular; a circumstance which Dr G. is inclined to ascribe to the weight of the column of blood pressing on the aortic valves, and thus augmenting the impediment to its exit from the ventricle.

Dr Graves found the pulse less frequent, from six to fifteen beats in the minute; and stronger in the horizontal than in the erect posture; and he infers, that in this position its maximum of strength and minimum of frequency are at once attained. This fact he thinks may explain the relief obtained by placing patients in the horizontal position in order to avoid fainting, for instance, that produced by venesection. This however, with deference to the author, we must be permitted to question. Syncope from venesection is doubtless occasioned by the blood being so suddenly drawn off that there is no longer a sufficient quantity left to excite the action of the heart; and it is with equal certainty obviated by placing the patient in that position, in which, while the blood is drained from the inferior vessels, it may, by being gradually allowed to flow from the superior ones, still be adequate to excite the heart.

In all diseases, except six cases of hypertrophy with dilatation of the heart, Dr Graves found the pulse to differ in frequency in the erect, sitting and horizontal postures. In four of these six cases, the fact of hypertrophy with dilatation was ascertained by inspection; and of the other two, in one it was certain during life, and in the other was at least probable. It would be doubtless premature to speculate on the cause of this peculiarity until the phenomenon has been observed in a greater number of cases. We conclude our account of this paper by subjoining the general conclusions, which Dr G. thinks may be established from an extensive number of observations.

"1. That the greatest difference occurs in patients labouring under fever, or in a debilitated state, in consequence of fever or any other cause. It may amount to thirty, forty, or even fifty, between the horizontal and erect postures.

"2. That this difference decreases after the first quarter of an hour, in most cases, but always remains considerable as long as the same position is observed.

"3. That in persons not much debilitated, the difference is much less than that stated above, and often does not amount to more than ten.

"4. That, when the patient lies down, the pulse rapidly falls to its former standard.

"5. That in some the frequency is greater between the horizontal and sitting posture, than between the latter and the erect; while in others the contrary takes place, so that generally the frequency in the sitting posture may be taken as a mean.

"In persons convalescent from fever or acute diseases, I find it is extremely useful to the physician to ascertain the comparative frequency of the pulse in the

horizontal and erect position. The greater the difference the greater is the debility of the patient; and, consequently, the more guarded must his medical attendant be in allowing him to sit for any length of time, particularly if the pulse, on his lying down, does not resume its usual degree of frequency."

7. *Cancer and Ulceration of the Colon.*—For the following very interesting case we are indebted to the *Medico-Chirurgical Review* for January 1831.

A man aged thirty-one years, of delicate constitution, had enjoyed good health until within a year of his admission into the hospital (the Hotel Dieu, at Paris). He then began to experience various painful sensations in different parts of the abdomen, but especially about the hollow of the left ilium. His appetite was not impaired, but his digestion was deranged, and he had frequent attacks of colic. The discharges from the bowels were in general liquid, consisting of bile or mucus,—sometimes containing clots of blood. He soon began to lose both strength and flesh, when a tumour appeared on the left flank, which was both visible and tangible. It was not until after eight months of suffering that this man applied at the Hotel Dieu for relief. He was then in a state of extreme emaciation and debility—had lost his appetite—and was much harassed with diarrhoea. The supra-iliac tumour was hard and about the size of a man's fist. It was very tender to the touch. It was pronounced to be cancerous,—and little doubt was entertained that it was in a state of ulceration. Nevertheless, it was determined to employ pressure on the plan of Mr Young, of England, and some ingenious instruments were contrived for effecting this measure. In six or eight days, it was ascertained that the volume of the tumour was considerably diminished without any augmentation of the patient's sufferings. The pressure was continued for fifteen days, when the tumour ceased to diminish, and became harder as well as more tender. The diarrhoea and emaciation now made rapid progress, fever came on, the evacuations became extremely fetid, bloody and puriform. Death soon put an end to the patient's sufferings.

On dissection the stomach was found to be very large, softened, and reddened on its internal surface. The mucous membrane of the small and great intestines was developed in a most extraordinary manner, and of vast thickness. As the lower portion of the colon was approached, this thickening became more remarkable, and changed, in fact, into a sub-schirrous condition. The sigmoid flexure of the colon was the seat of the tumour, which, indeed, was formed by the thickening of the intestine itself. Externally, it was very dense in structure; but internally it was soft, and assumed the fungoid or encephaloid character. In its centre was a large cavity with irregular parietes, which had furnished the fetid and purulent discharges during life.

It was but very recently, adds the editor of the *Review*, that we met with a true fungoid or malignant cancer of the pylorus, in a female about fifty years of age. She had experienced daily sickness after food for more than a year; but the complaint was greatly exasperated by long continued sea-sickness in the steamer between Ostend and London. From that time till the day of her death, six or seven weeks afterwards, she was not able to keep any thing on her stomach. Yet she preserved her corpulency till the last. About three weeks before death we examined carefully the abdomen, and perceived a slight hardness in the region of the pylorus, but it was unattended by tenderness. She was seen by Dr Granville and Mr Guthrie in consultation, but no remedial measure could stop the incessant vomiting after even the most trifling quantities of fluid, taken into the stomach. The *argemum nitratum* allayed the irritability of the stomach more than any other remedy, but it gave only temporary relief. The patient was worn out by constant vomiting, fever and inanition. On dissection the parietes of the stomach, in the neighbourhood of the pyloric orifice, were thickened and indurated,—but from the mucous surface of this thickened part a malignant fungoid tumour projected, and blocked up the passage into the duodenum, which would with difficulty admit the point of the little finger. This fungoid prominence was in a state of ulceration. It is not a little remarkable, that the fat was an inch and a half in thickness on the abdomen, notwith-

standing this long continued sickness occasioned by an organic disease of the stomach.

8. *Dropsy of the Liver*.—This case is related by Dr Hesse in *Horn's Archiv. &c.* for September and October 1829. We derive the present notice of it from the *Archives Générales*, for October 1830. An unmarried female, by trade a seamstress, who had always enjoyed good health until within a few years, when in consequence of a fall she struck the right side of the abdomen, over the region of the liver, upon a pointed stick. Various remedies were immediately made use of, both externally and internally; the abdomen, however, gradually augmented in size, and finally the chest became affected. The patient applied to a physician, who pronounced her to be labouring under ascites, consequent upon neglected hepatitis. He directed various remedies from which no relief was obtained; paracentesis was then performed on the right side of the abdomen, and repeated on the same side, but higher up,—no discharge of fluid took place. Dr Hesse was now called in. On examining the patient he found the abdomen enormously swollen, and projecting towards the umbilicus in form of a cone, which was surmounted by a tumour about the size of an infant's head. The umbilical ring was free and dilated. The tumour was light, movable, and appeared to communicate internally with the cavity of the abdomen. The patient experienced great difficulty in respiring in a horizontal position. There was a constant inclination to evacuate the bowels, but nothing was discharged. There were no traces of œdema, but every portion of the body, with the exception of the abdomen, appeared, as it were, momified. The pulse was scarcely perceptible. The patient was all the time lively and inclined to gaiety. Dr H. immediately passed a trochar through the umbilical ring, and gave issue to twenty-seven pints of an inodorous, mucilaginous, and somewhat turbid fluid. Portions of a fibrinous substance, which adhered firmly within the abdomen, insinuating themselves into the canula, put a stop to a further escape of the fluid. A catheter was now introduced into the canula; it penetrated to the depth of nine inches without coming in contact with the sides of the cavity. For eight days nearly five pints of serum were discharged daily by the opening, from which the patient appeared to experience relief,—and under a restorative treatment, in the space of a few weeks, she was so far improved in health, as again to return to her usual employment. The abdomen still, however, remained tumid and hard, and the digestion difficult. At the end of a year the patient was again obliged to keep her bed; she died in a few months; during this period no fluctuation could be perceived within the abdomen.

Dissection.—On opening the abdomen, the diaphragm was found to be thrust up on the right side as high as the second rib, and on the left, to the fourth. The heart and lungs were very small. There was no trace of omentum, nor of mesenteric glands. The pancreas was destroyed (?). The stomach, intestines, spleen, kidneys, uterus, and bladder, were of an extremely small size. The liver, which was entirely free over the whole of its entire surface, filled completely, as it were, the enormously large cavity of the abdomen. The fluid which had been evacuated by puncture through the umbilicus, appeared to have been contained entirely in the substance of the liver. This organ was of a deeper colour than natural,—its left lobe was greatly enlarged, extending to the fourth rib of the left side,—its parenchyma was very loose, and its vessels dilated. The lobus spigellus presented nothing unusual. There existed no gall bladder, its place being occupied by bands of a cellular structure, small ulcers, and some biliary calculi about the bigness of nuts, each one of which was surrounded by a kind of membrane. The biliary duct was obstructed, although during life the patient had presented no icteric symptoms; her skin being rather of an ash colour. The inferior surface of the liver was covered with cellular excrescences, and with superficial ulcers. The superior convex surface adhered intimately with the diaphragm. Within the right lobe, which was enormously enlarged, a fluctuation was perceptible, and an incision into it gave issue to twelve pints of sero-

sity, at first of a watery appearance, then turbid, and flocculent; followed, finally, by a kind of sanies without smell, and which covered the whole of the internal surface of the cavity formed within the right lobe. The parietes of this cavity were only half an inch in thickness. From the circumstance of the serosity being discharged during life, by the opening made through the umbilical ring, it was evident that the umbilical vein had been rendered permeable, and that through it the cavity in the liver had communicated with the umbilicus. Besides this, no other communication existed between the liver and the peritoneum. It is worthy of remark, that notwithstanding this extensive lesion of the liver, the patient's gaiety of temper was never impaired. It is probable, though Dr H. does not say so, that in this case the dropsy of the liver was connected with development of hydatids within its substance.

9. *Instance of Universal Hypertrophy.*—A female of a robust constitution, five feet two inches in height, menstruated regularly and abundantly until about her eighteenth year, when in consequence of a violent storm by which she was greatly frightened and wet to the skin, the menstrual flux, which had existed for some days, was suddenly stopped and did not again appear, nor has she had the least trace of it up to the present period, eleven years from the time of its suspension. The inconveniences she experienced in consequence were a shortness of breath, heaviness of the head, and a numbness of the limbs: to these symptoms she paid very little attention. She continued to follow her rustic employments, and felt perfectly happy at the circumstance of her freedom from her monthly evacuations. Soon, however, the muscles of this female, the cellular and adipose membranes, and even the skin began rapidly to increase in bulk and attained finally a very remarkable development. Her appearance, when seen by Dr Claubry, by whom the case is related in the *Journal Hebdomadaire*, Vol. I. p. 76, was as follows. Height five feet two inches as formerly; cranium of the size and proportions ordinary in a female of her stature, but appearing very small in comparison with the size of her face, which was enormously developed. The skin on the forehead, eyebrows and lids, nose, lips and cheeks presented a thickness, projection and volume such as we might conceive would be adapted to the mask of an individual seven or eight feet in height. The soft parts of the face were prominent and at the same time pendulous—the chin descending before the neck much more than it should do were the feature well proportioned. Between lips of enormous thickness, circumscribing a mouth of giant size, passed out the tongue, broad, thick and long, which filled the cavity of the mouth, while the point was bent over the inferior teeth. A constant salivation gave a disgusting appearance to the aspect of the patient, and her speech was impeded by the hypertrophied condition of her tongue. Her neck was of great thickness, divided lengthwise by thick folds of the skin raised by the masses of fat beneath; this was especially the case at its back part. The mammae were of enormous size, covering the whole front of the thorax and reaching within a little of the chin; they were coated with a thick and adhering skin. The trunk of the body appeared remarkably short in consequence of its great thickness and breadth. The abdomen was remarkably prominent, and the dorsal and lumbar regions were of uncommon breadth. Notwithstanding the thickness of the fat and skin by which the muscles were covered, those of the trunk were readily recognized, especially when the hand was applied upon the back, loins or abdomen, when the muscles were thrown into action. The labia pudendæ, &c. were very much augmented in bulk. The limbs, both superior and inferior, appeared, at first view, disproportionably short, in consequence of their immense bulk. The layer of fat was less abundant on them than on the body, and the muscles appeared developed to a remarkable extent. The hands presented a singular appearance—the bones, as in every other part of the skeleton, retaining their normal size, while the soft parts were excessively developed. When the hand was opened, its great thickness with its immense fingers, which in consequence of their bulk appeared uncommonly short, caused it to resemble nothing but a very large sized racket for playing

ball. The feet presented a similar disproportion between their length and thickness. The heart of this female appeared likewise to have experienced, in common with the rest of the muscular system, an unusual development; it occupied a very large space behind the sternum and in the left side of the chest. Its pulsations were very strong, and communicated a shock to the head of the examiner when using the stethoscope; but no abnormal sound could be detected during the passage of the blood through its several openings, while the perfect correspondence between its movements and those communicated to the arterial tree removed any doubt as to its healthy condition. The encephalon would appear not to have been exempt from the same disposition to hypertrophy displayed by the other soft parts, though the solid parietes by which it is enclosed prevented an actual enlargement of its bulk. The patient, however, who until her eighteenth year was far from being without intelligence, subsequently became gradually obtuse in her intellectual powers, and finally fell into a state of partial idiotism. She complained, also, of ringing in the ears, vertigo, heaviness of the head, &c. phenomena, all of which may be referred to the increased amount of blood driven into the brain by the hypertrophied heart, and to the resistance offered to the enlargement of the cerebral mass by the cranium. The patient from the same cause was constantly disposed to sleep and to a general state of numbness, to get rid of which she engaged in the most active bodily exertions. She has still an excellent appetite, drinks very little and is habitually costive. To remedy the plethoric condition of her system, from which she suffers inconvenience, she frequently has recourse to leeching. The foregoing case is one of considerable interest; it is not merely an instance of excessive plethora from suppressed menses, nor a simple adipose polysarcy; the body of the patient presented absolutely an excessive nutrition in all the soft tissues including the muscular. Her idiotism appears incurable, more especially as the patient could not be brought to see the propriety of abstinence, the use of watery drinks, acids, &c. It is added that this herculean female presented no symptoms of the venereal passion.

10. *Puerperal Peritonitis with Perforation of the Oesophagus*.—We copy this interesting case from the *Archives Générales* for November 1830. It is related by Dr Lachéze, Adjunct Professor of the Secondary School of Medicine of Angers, and appeared originally in the *French Lancet*. Aglaé Ch., aged fifteen years, came to l'Hospice de la Maternité to lye in. During the period of her pregnancy her health was perfectly good, until within five days of her confinement, when she was attacked with violent colic and diarrhoea; she had nevertheless a favourable delivery on the 18th December 1827. The lochial discharge was very slight and no milk appeared in the breasts. The abdomen remained tumid and the disease of the bowels persisted, notwithstanding the use of opiates, emollients and a restricted diet. This state of things continued until the 27th of the month, when there occurred violent pain of the abdomen, increased upon pressure, constant inclination to vomit, with the occasional discharge from the stomach of a dark coloured fluid, a sense of constriction in the chest, and pain about the neck increased when the parts were touched. She was directed a pectoral ptisan, an antispasmodic potion, and an absolute diet. On the 23d the symptoms were less severe, the diarrhoea had ceased; on the 29th, however, it again recurred, to a greater extent than before. Injections of starch and laudanum, ptisan of rice, an anodyne potion with syrup of quinces were directed; diet as before. The patient exhibited no alteration in her symptoms up to the 4th of January 1830. Her features were now considerably altered and hippocratic. On the 5th, pain of the abdomen renewed. Six leeches were applied to the vulva. On the 6th the symptoms assumed an alarming intensity; face very pale; at intervals the pain of the neck and sense of oppression increased greatly in intensity. The patient died in the evening, her consciousness being not the least impaired. *Autopsy* fourteen hours after death. The cranium was not opened. On the right side of the neck there existed a disorganization of the muscles and cellular tissue, which were converted into a blackish pulp, of a sweetish smell, analogous to that of the fluid which was contained in the chest and stomach. The disor-

ganization in the neck extended upwards to the angle of the jaw. The vessels and nerves had the appearance of being dissected. The same kind of disorganization existed in the posterior mediastinum, along the vertebral column. The cavity of the thorax was filled with a blackish fluid, tolerably thick, having a sweetish smell, as of syrup. The lungs were collapsed and presented slight adhesions with the pleura. The posterior mediastinum communicated, at the point between its upper third and lower two-thirds, with both cavities of the chest, into which was discharged from it the black fluid already noticed. The œsophagus was perforated to the extent of nearly two and a half inches. From the cardiac orifice of the stomach to the first bronchial ramification all that remained of the œsophagus was about two lines breadth of its posterior parietes, the edges of which presented a fringed appearance. The portion which was left offered no traces of disorganization nor alteration in its texture. The abdominal cavity was filled with a sero-purulent fluid, and its various viscera were united together by numerous points of adhesion. The upper portion of the intestinal tube was healthy, but all the large intestines and the inferior portion of the ileon were in a softened state with thickening of the mucous membrane. The uterus was contracted and perfectly healthy.

11. *Spinal Apoplexy*.—The following case of hæmorrhachis, or spinal apoplexy, is related by M. Fallot, physician to the hospital at Namur, in the *Journal Complémentaire des Sciences Médicales* for October 1830. A man twenty years of age, of middle stature, muscular, with light hair, blue eyes, without beard, who had previously enjoyed good health, lost by degrees his appetite and strength, and was affected with hæmoptysis during three months. He was not, however, prevented from continuing his ordinary occupations, until the 11th of May, when he was sent to the hospital. His symptoms then were, face red and tumid, with œdema of the eyelids, light cephalalgia, extreme lassitude and pains of the limbs; intellectual faculties unaffected; pulse without frequency; skin without heat; respiration easy and equal; a slight disease of the throat, and difficulty of swallowing; the fauces without redness. He was directed pedaluvia and common ptisan. In the evening there occurred a sudden congestion of the brain, marked by a loss of sight, vertigo, injected eyes, and small and contracted pulse. Fourteen ounces of blood were taken from the arm. The pain in the head, the intumescence of the face and injection of the eyes now disappeared; he passed, however, a disturbed night. On the 12th, the head free from disease; face very red; œdema continued only in the left inferior eyelid. There was extreme inquietude; with continued agitation from the intense pains of the limbs, which were thrown occasionally into spasmodic contractions, during the continuance of which the face became of a bluish tinge, and the head forcibly thrown back, every attempt to bring it to its natural position giving rise to sharp pains. The cervical region tumid, and hot, and painful upon pressure. Skin rather cold than hot; pulse small, slow, and concentrated; sensibility of the surface reduced; tongue clean, flat and soft; no thirst; excretion of urine; bowels constipated. Forty leeches were applied to the nape of the neck with a purgative enema, and gum water acidulated for drink. During the day the symptoms diminished, but colicky pains occurred, which required the application of ten leeches along the course of the colon. On the 13th, lungs engorged, presenting a crepitant rattle throughout their whole extent; every attack of coughing caused the expectoration of a mouthful of a sero-sanguinolent fluid, covered with abundance of thick foam. The features were altered; face of a bluish colour and tumid; respiration short, rattling and hurried; pulsations of the heart rapid and confused; pulse thready; extremities cold; the spasmodic contractions have disappeared, and the muscles move in obedience to the will. The patient was able to raise himself in a sitting posture, but could not retain this situation from the sense of suffocation which it occasioned. The head may be inclined upon the chest without inconvenience, but falls backwards when left to itself. The skin has regained its natural sensibility in every part excepting over the cervico-dorsal region. The whole body exhales a nauseous and penetrating odour. Cups deeply scarified were applied to the nape

and back. These caused a considerable discharge of blood, and immediately afterwards the sensibility at this part was renewed. The respiration became less short and rattling, and the skin somewhat warmer. Twelve leeches were directed to be applied near the great occipital foramen, with hot sinapisms to the back, and blisters to the wrists. During the day the patient was tranquil, repeating several times that he felt very well and without pain. At four o'clock he turned over on his back, and immediately expired without an agony. A few moments after death his face and lips became swollen, the latter being of a violet colour. The penis was in a state of partial erection.

Autopsy seventeen hours after death. The limbs flaccid. On cutting into the muscles of the cervical region, there escaped a considerable quantity of black fluid blood; this occurred at no other part. The surface of the cerebrum and cerebellum was of an obscure red, depending in part on the extreme distension of the meningeal vessels and sinuses by dark blood, and in part upon the infiltration with a bloody serum of the sub-arachnoidien cellular tissue. The substance of the cerebrum and cerebellum presented no abnormal redness; it was firm in every part with the exception of the cerebral triangle, the anterior pillars of which were sensibly softened. A little reddish serosity existed in the lateral ventricles. Under the arachnoid membrane, at the internal edge of the lower surface of the left cerebral lobe, there was found about a coffee spoonful of black coagulated blood. The vessels of the rachidien meninges were strongly injected. On the posterior surface of the spinal marrow was found, on the level of the fifth pair of cervical nerves, beneath the arachnoid, which was raised up in consequence, a layer of coagulated blood, which, confined at first to the space of a few lines of the right cord, afterwards enlarged, and varying merely in thickness, covered the whole of the posterior surface of the spinal marrow to the origin of the cauda equinae, where it terminated abruptly. On the anterior surface of the spinal marrow were observed numerous small distinct clots of blood of irregular form, and laying on the spinal nerves either of the right or left side. The first of these clots was immediately without the occipital foramen, and hence much higher than where the posterior layer of blood commenced. About the middle of the dorsal portion of the spinal marrow there existed a coagulum of about two inches in length which occupied the whole width of the canal. These coagula, and the layer of blood posteriorly, were firmly attached to the subjacent pareties and to the fasculi of nerves. The substance of the spinal marrow had undergone no alteration either in its consistency or colour. Beneath the effused blood, however, the membrane by which it is immediately enveloped was of a much deeper red than in other parts, and was not rendered paler by washing. The lungs were engorged with black and frothy blood, and crepitated throughout their whole extent. About a pint of a bloody serum existed in the cavity of the left pleura. The right pleura adherent. Heart of a size larger than usual. The pareties of the ventricles thickened. Venous system filled with blood. The right auricle contained an enormous coagulum; the left cavities empty. A bloody serum was contained in the peritoneal cavity. An arborescent and punctulated injection existed on the greater part of the ilium; a few oval patches of a brownish red, with small spots of a bluish black, existed upon the free surface of the termination of this intestine.

III. THERAPEUTICS.

12. *On Strychnia in the treatment of Paralysis.*—Our contemporary, the American Journal of the Medical Sciences, contains an essay on the above subject by Dr E. Geddings, lecturer on anatomy and surgery at Charleston, S. C. Dr G. details a few cases in illustration of the efficacy of the remedy in several varieties of paralysis.

The first case was one of hemiplegia of the whole of the left side of the body. The patient was a male, and aged about fifty years. He was placed under treat-

ment on the 20th of July 1829. Had been suddenly attacked almost a month previous with violent pain in the head, left arm and leg. He fell down in a state of insensibility, succeeded by a total loss of sensation and motion of the parts mentioned, and double vision. When visited, the double vision had disappeared; there was no fever; speech was unimpaired. The patient was ordered to take cathartics, and to have the head blistered. Two days after, the medicine was repeated; cups were ordered to the nape of the neck, the parts afterwards to be covered by a blister. Other stimulating external remedies were subsequently employed. This plan, however, proving ineffectual, the tincture of strychnia was resorted to on the 24th of July. On the 28th, the pain was relieved; motion and sensibility had improved; the muscles of the arm were affected with twitchings; the paralytic arm and leg were noticed to be œdematous. The improvement gradually progressed, particularly in the leg, the arm remaining, on the 4th of August, nearly the same. In about a week from this time the patient began to walk with the assistance of a crutch, and shortly after, the power of motion in the leg was so far restored as to enable him to walk to any part of the city. He finally recovered sufficiently to be sent into the country. The arm, in the meantime, had not regained its power, and had undergone but a very slight amelioration.

Dr G. thinks that in this case the paralytic symptoms originated from an extravasation of blood in, or upon some part of the brain. Hence his first indication was to subdue irritation by cups and blisters, and to create a revulsive impression from the brain to the bowels and extremities by means of cathartics, and sinapisms applied to the legs. Considering with most writers that strychnia and other remedies of the sort should not be used in cases of paralysis arising from recent attacks of apoplexy, he resorted to it in the above instance only after having employed other means without benefit, and because he considered the case of a desperate character.

In the second case, the paralysis was complete. The patient was a man twenty-eight years of age, and had been in the hospital some months. His legs and arms were so completely powerless as to render him incapable of helping himself, and whatever he took by way of food or medicine had to be put into his mouth by another person. His legs were drawn up to a right angle with the thighs, and could not be straightened. His bowels had, moreover, so far lost all power as to be incapable of expelling their contents, except when inordinately excited by stimulating enemata. The disease was attributed to the long continued and imtemperate use of bitter beer and ardent spirits, especially gin, which had probably been adulterated with acetate of lead.

In this case the strychnia was administered by the stomach, and also, together with aloe, in the form of enemata. By the latter mode it was intended to stimulate the muscular fibres of the large intestines. This plan was instituted on the 15th of January. "By the 1st of March the mobility of the members had become so far restored, that nothing seemed to prevent the patient from walking but the flexed position of the legs, and a want of confidence in his own powers. These difficulties were gradually surmounted by means of friction and exercise, and at the present time (September 1830), though he still experiences a little stiffness of the members, he can walk without assistance, and descends and ascends almost daily a long flight of stairs. The bowels have been for some time past in possession of their natural tone, and evacuate their contents without the aid of medicine. The general health of the patient is entirely restored."

Two more cases are related. They appear to have been produced by the same cause as the preceding one. In these the paralysis was limited to the fore-arms and hands. In both the same plan of treatment was highly beneficial. Dr G. remarks in conclusion, that he has employed strychnia with much apparent benefit in some forms of chronic irritation of the alimentary canal, especially in persons who were affected with habitual constipation of the bowels; but adds, however, it should always be borne in mind, that the natural tendency of the remedy is to irritate the mucous membrane.

13. *On external Medication.*—Dr W. M. Fahnestock of this city has published an essay on this subject in the last number (February 1831) of the *American Journal of the Medical Sciences*. This essay contains some very useful practical precepts, and does the author much credit. We cannot help thinking, however, that Dr F. does not do himself full justice by quoting so profusely the very language of innumerable authors; by stringing quotations by the dozens on the most common topics. He remarks, that it is a favourite practice with him in discussing subjects, to fortify his opinions with the facts and observations of established authorities, and that, consequently, on the present occasion, he will not consume time with a detail of his own experience. As regards ourselves, we believe, that if he had followed the contrary plan, supposing always that he had some original facts worth narrating, and we are sure that such is the case, his paper would have been more acceptable to most of his readers, who probably have in their hands the greater number of the works from which he has quoted. Be this as it may, Dr F. reprobates the early use of external stimuli in internal inflammations of the serous and mucous membranes (among the latter of which we are glad to find he includes fevers), restricting their employment to the moment "betwixt high excitement and the state of collapse, which Dr Rush denominated the blistering point." He alludes with decided disapprobation to the practice so general some years ago, and occasionally pursued even at a later period in our country, of applying many blisters in fever, and keeping them open by savin ointment. He thinks, very justly, that it would be much more philosophical, where cups and leeches cannot be procured, instead of persisting with the irritating substances, to endeavour to subdue the irritation and congestion by venesection and the more soothing applications. Among these he prefers emollient and anodyne articles, which he thinks act on the nervous extremities, and secondarily, on the centres, and not by the absorption of their particles. He cites many authorities to show the efficacy of these means in a variety of maladies.

14. *Pertussis arrested by the use of Belladonna and Hydrocyanic Acid*—Dr William W. Valk of Providence, R. I., reports in the February (1831) number of the *American Journal of the Medical Sciences*, that he has used with great success in pertussis the combination of belladonna, ipecacuanha and sulphur as recommended by Dr Kahleiss of Germany. In a case unattended, as Dr V. thinks with pulmonary congestion, and in which "an occasional emetic was given to throw off the accumulation of mucus in the air passages," the Doctor determined to try belladonna, &c. and accordingly prepared the following formula. 1. R. Pulv. rad. belladon. gr. 1½. Pulv. dov. gr. 2½. Sulph. præcip. ℥i. Sacch. alb. ℥ii. M. div. in chart. 20. One powder every three hours, and between each dose twelve drops of the following. 2. R. Aqua chamomile ℥ss. Syrup simplex ℥ii. Acid. prus. gtt. vi. M. These prescriptions are less in the proportion of their ingredients than those of Dr K. as his are for a child two years old, he used nearly four times the above quantity for the first formula, and twice as much for the second. "For three days," continues Dr V. "these medicines were given with care and regularity, when the relief afforded being sufficiently evident they were omitted (on the 11th November), and from that time to the present (18th) the child continued perfectly well."

Dr. V. states that he has every reason to believe that these remedies will prove of singular efficacy in cutting short the progress of this distressing disease; for he joins Dr. Dewees and many others, in opinion that Pertussis has not a definite duration, and need not necessarily run a particular course.

15. *Treatment of Paralysis.*—We have already in an article of the present Quarterly Summary spoken of the use of strychnia in the above mentioned disease. We must now recur once more to the subject in order to notice the opinion of Dr Elliotson, the distinguished physician of St Thomas's Hospital, London. We quote from a clinical lecture delivered by that gentleman, and reported in a late number of the *Medical Gazette of London*.

"Strychnia unquestionably stimulates the nervous system, and no more; but

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as paralysis frequently arises from chronic inflammation, or pressure, or change of structure, it can in such cases be of no benefit, and may do harm; and when there is effusion, although electricity may do good, I do not apprehend that strychnia can. There are cases in which the nervous part is merely in a state of torpor, and in these strychnia may be of use; but these instances are very inconsiderable. I have employed strychnia, and more frequently nux vomica, but I cannot say with any sort of satisfaction. Antiphlogistic measures, when employed in the first instance, will often cure this disease entirely; at any rate, if they are moderately carried on for a length of time, they will lay the foundation for a cure at a subsequent period. If you remove all the circumstances of inflammation and congestion in the first instance, I have no doubt, though no benefit takes place for some time afterwards, that ultimately you will do more good, and the efforts of nature will be more effectual, than if you do not employ them; and that strychnine, iodine, and electricity, will obtain the credit of the subsequent improvement often very undeservedly." This we consider sound, practical reasoning.

Dr E. speaks in the same lecture of a case of paralysis of the wrists, produced by lead. The disease was unpreceded by colic. Having found Strychnia or nux vomica beneficial in such cases Dr E. resorted to the former, and at the same time ordered the wrists to be electrified three times a day. The improvement was so rapid that Dr E. was sure it must be the electricity which benefited him; and he therefore left off the strychnia—and the cure proceeded with equal quickness. The patient entered the hospital on the 2nd of October, and so far recovered under the use of electricity as to be able to go out to work on the 11th of November. He would have been discharged sooner, but that he had a slight attack of rheumatism in the knee.

16. *Stammering cured by the long continued use of Cathartics.*—Dr Bosstock relates an interesting case of the sort, in the 16th volume of *Medico-chirurgical Transactions*. The patient was a boy of a robust form and a florid aspect, of a healthy constitution, and of more than ordinary activity of mind and body. When between two and three years old, and after having acquired considerable readiness in speaking, he was suddenly affected with so great a degree of stammering as to be almost incapable of uttering a single syllable. Two physicians, who were consulted, confessed their inability to propose any specific plan of treatment which might afford a prospect of success, and merely prescribed a strong cathartic medicine to remedy a plethoric state under which the child laboured. The effect of the purgative was so favourable that it was repeated three or four times, and each time with such decided benefit as to leave no doubt on this point, on the minds of either of the parent or the practitioner. The complaint, however, shortly recurred, was again attacked with the same remedy, and was again subdued. The advantage, though so decided, being only temporary, a system of diet, calculated to reduce permanently the plethoric habit and obviate the necessity for the continued repetition of the purgatives, was adopted, and rigidly adhered to for several years. The plan was found highly beneficial. By a steady adherence to it for about eight years, the complaint was kept at bay; but whenever any relaxation in the diet took place, or when the purgatives were omitted or too long delayed, symptoms of the impediment immediately reappeared. At length, when about twelve years of age, the tendency seemed so far subdued, that a relaxation of the restriction was not followed by the usual unfavourable consequences, and the boy being then at a public school, it was not easy to maintain the former discipline. For some time no bad effect ensued, but at length the complaint recurred, and was unusually obstinate, so as to require a long and severe course of purgatives, which, however, was finally successful. "During the last two years the tendency has occasionally manifested itself, but it has always been easily removed by a moderate use of purgatives, and by a temperate, although not a rigidly abstemious diet. The boy, who is now in his fifteenth year, may be said to be free from the complaint."

In this communication, Dr Bostock does not call attention to the condition of the gastro-intestinal mucous membrane before the purgative plan was adopted, or to the effects of the cathartic upon that tissue. The fear of inflaming it does not seem to have been at all entertained, and purgatives were resorted to first to correct a plethoric state, and afterwards continued empirically because they had proved beneficial for the stammering, or to change the nature of the stools. *How* they produced these effects Dr B. does not attempt to decide. For ourselves, we must be allowed to express our belief, that the purgatives acted by revulsion, and also, aided by low diet, by keeping down the excitement of the brain. Their bad effects were evidently obviated by the low diet, and we have little doubt, the same results in the cure of the disease might in all probability have been obtained more safely by low diet, blood-letting, leeches, and revulsions to the skin. It is not always safe to subject the gastro-intestinal canal to the frequent irritation necessarily occasioned by purgatives. The plan may sometimes succeed admirably, but the physician cannot be certain of this, and may in other cases not only be disappointed but do much mischief. Too much care cannot be bestowed by those who recommend a perturbative plan of treatment, in pointing out such condition of the organs that are to receive the impression of the remedies which will admit of their employment. When this is neglected, the recommendation of such a treatment may be often a source of evil, for the less experienced practitioner, who feels inclined to adopt it, will be liable to do so in cases in which the state of the gastro-intestinal mucous membrane should really contraindicate it. Under these circumstances, sufferings, and even death are liable to follow. Many, we know, will get over the embarrassment produced by the unexpected result, by talking of a sudden accession of a new disease; of some unlooked for complication; but the physiological physician,—one who has paid attention to the mode of action of remedies, and is aware of the value of symptoms, knows what opinion to form of these unexpected and new complications.

17. Treatment of Fevers.—The French physicians, after employing much of their time with researches into the anatomical character of diseases generally, but of fevers in particular, seem to have lately turned their attention to the subject of therapeutical indications, and the effects of particular remedies. The Parisian medical journals of the last year contain many essays which attest this fact. Among these essays we find a few which appear to us to merit a notice, and a summary of whose contents we consequently propose to lay before our readers in this and in succeeding numbers of our Journal. We commence with two memoirs on fevers by M. Dance of Paris, contained in the September and October numbers of the *Archives Générales de Médecine*. In the first essay M. Dance gives the details of sixteen cases of the disease, all of which were treated by *tonics*. They are divided into three series. Those in the first series are four in number, and all ended fatally. But it results from the history of these cases that they were submitted to treatment after the symptoms had progressed so far as to leave little hopes of a recovery, whatever plan had been pursued. Antiphlogistics were at first employed, but without success. Tonics were now substituted for these means. So far, however, from proving more effectual, they aggravated the disease; the tongue and gums became black, inflammation of the sub-maxillary glands occurred, followed by eschars in the region of the sacrum, prostration of strength and death. On dissection the mucous membranes were found thickened, softened and ulcerated to a considerable extent. The second series is composed of five cases, all of which likewise proved fatal. Antiphlogistics were also had recourse to in these to combat symptoms of general and local surinflammation. As soon, however, as subsultus tendinum, stupor, prostration of strength, &c. occurred, the plan of treatment was changed, and camphor, bark and the like remedies were resorted to. These remedies, however, did not produce the least good in any of the cases, for the symptoms were aggravated either slowly or immediately, and death, in all, ultimately followed. It is evident from a perusal of these cases that the death of the patients must be attributed in great measure to

the means employed; for, unlike those of the first series, which were of the most malignant kind, these were of a mild nature. Several, indeed, appeared to be getting well, when the plan of treatment was changed. On dissection morbid conditions,—redness, thickening and ulceration of the mucous membranes were discovered. But they were not sufficiently extensive to be regarded as incurable, or as sufficient to account for the fatal termination. Besides, such was the aggravation of the disease from the tonic treatment, that we are induced to attribute to the latter a considerable agency in the production of these pathological changes in the membranes. We are led to this opinion by the circumstances, that the worst of these changes were observable principally in the large intestines; and that it was precisely on these parts that the medicines in question produced their impression, for they were administered in the form of enemata. One patient took in that way five hundred grains of camphor in one month.

The third series contains seven cases. They all terminated, like those of the preceding series, fatally. But they differed from the others in this, that the employment of tonics appeared at first to produce some amendment in the symptoms, and secondly that the pathological changes in the intestinal canal were not considerable. As regards the first circumstance, the momentary amelioration and subsequent aggravation of the disease, M. Dance remarks, that it resulted from the artificial stimulation which braces up the system for a little while, but, soon subsiding, leaves it in a state of greater inertia. The same phenomena invariably occur when stimulation is made use of in health or disease, though particularly when too powerful or resorted to under unfavourable circumstances. It wears away the power of life and aggravates the disease. It is probable that tonics appeared advantageous in these cases, only because the disease was of a mild character; for the pathological changes in the intestines were inconsiderable. If the stomach was in some cases found diseased, we have reason to believe that the effect was in greater measure produced by the tonics. But whether this be the case or not, it appears probable that in the instances before us these remedies aggravated the disease; and whether we regard the latter as produced by a local inflammation or as existing independently of this, we must conclude that tonics, so far from curing, will tend to aggravate it. It is right to state, at the same time, that in all the patients of whom we have spoken there occurred eschars on the sacrum, sometimes near the trochanters; that the ulcers produced by blisters generally became gangrenous, and that unhealthy inflammations arose in one case spontaneously on different parts of the skin. These effects cannot be attributed to putridity; for in that case the tonics, which were liberally employed, should have remedied it. Besides, as M. Dance adds, similar cases treated on a different plan hardly ever manifest these phenomena.

The second memoir contains a detail of the fourth, fifth and sixth series of cases treated by means of tonics. These cases are twelve in number, and have all terminated in a successful manner. In these instances the disease was evidently of a mild character, and would probably have got well as readily, if not more readily, without as with tonics.

In some cases of the fourth series it was indeed found necessary to suppress for a few days the use of the bark in consequence of its producing diarrhoea. Besides, unlike what took place in the preceding cases, this remedy was given alone and uncombined with camphor and acetate of ammonia. At any rate the advantage derived from bark in these cases was not so great as to lead to the use of the remedy in other cases of a similar kind. All we can allow is, that it will not do so much harm as might have been expected.

In the cases of the fifth series, the patients having recovered, the success may perhaps be attributed to the tonics employed. But in reading the details of these cases, we find that the benefit derived from these remedies is very problematical. In some, the patients were three months before recovering perfectly, and in various individuals relapses, diarrhoea, intellectual derangements were observed. In others the cure could only be referred to several critical abscesses, supervening on the lower extremities. Besides the tonics were used very sparingly;

yet in two cases, the disease, which was of the mildest kind, was greatly aggravated, and the patient recovered with great difficulty. In many, antiphlogistics were employed at the same time with tonics; and in several the cure could not be accomplished until these remedies were discontinued, and the patient put on spare diet and mild remedies.

In the patients of the sixth series, four in number, the use of tonics was preceded by that of antiphlogistics; and they were only employed for a few days and with great caution, and then discontinued in consequence of the bad effects they produced. M. Dance concludes from all that precedes—after a careful examination of the phenomena presented in all the cases he describes, that tonics, even when employed with the greatest caution, are not free from danger in the diseases in question; and that when they appear to act advantageously, the benefit derived from them is only temporary. Nevertheless, he does not pretend to condemn the use of these remedies entirely; but merely expresses the opinion, that as their proper application is a point of such delicacy, it would be more prudent to abstain from them altogether.

M. Dance next relates the histories of twelve cases of fever treated by antiphlogistics as the principal remedies. These are divided into two series—the first consisting of seven cases, the second five. All these cases ended fatally. Those of the first series terminated in the first period of the disease, as may be inferred from the short duration of the case and from the circumstance that the follicles in the intestines were simply tumefied and not yet ulcerated. All the individuals composing that series died with symptoms of cerebral derangement, although on dissection this organ presented a less degree of alteration than the intestines (except, however, in one case), this alteration consisting in simple sanguine or serous congestion of the membranes or substance of the brain. In one case, no alteration whatever was discovered in the cranial cavity. In all, the disease being inflammatory, as may be inferred from the nature of the lesions found and the symptoms observed during life, the most active means of the antiphlogistic kind were resorted to, but to no avail. The delirium did not abate in one single instance from the operation of these remedies, and was even in some much aggravated by them. Indeed, as M. D. remarks, if we judge empirically of the treatment, without any reference to the nature of the disease, we are led to conclude that death was certainly accelerated and even produced by the too free and ill timed abstraction of blood. M. D. is inclined to think that the delirium in those cases was often, when continuing after very copious depletion, rather the effect of nervous derangement than of sanguine congestion, and that it may together with the convulsions noticed have been the results of or have been aggravated by these means—circumstances which sometimes take place after very copious hemorrhages.

Some may suppose, M. Dance remarks, that in those cases the lesions, at least those in the alimentary canal, were of so serious a character, as to call for this energetic treatment, and that death occurred because the force of the disease was superior to the remedy. He finds an answer to this supposition in the cases of the second series. In all these instances death occurred and was preceded by symptoms of cerebral derangement. The pathological changes in the intestines were inconsiderable, if compared to those observed in the cases treated by tonics,—consisting, as they did generally, in a few follicular engorgements, and still fewer ulcerations. In some cases the colour of the lining membrane of the stomach was abnormal,—sometimes thickened and softened. The parietes of the intestines were in some found thinner, and the mucous membrane less villous than in a healthy state. But whatever degree of importance we may attach to these lesions (a part of which may be regarded as a cadaveric result), they cannot be considered incurable. The lungs were generally found engorged and softened at the posterior part,—the brain was found sometimes hardened and engorged,—in other cases, red and soft. The treatment was directed chiefly to the gastro-intestinal disease, and was very active. Notwithstanding this, the disease became aggravated, and finally proved fatal. “If we recollect what has been said of the small number of engorged or ulcerated intestinal follicles (morbid

alterations which constitute the principal anatomical state of the disease which occupies us at present), we shall be ready to conclude that several of the patients, whose disease have been described, would not have died had the depletion been less abundant and more judiciously directed, for it is not the use but the abuse and ill timed employment of this means, which we combat."

M. Dance promises to continue his inquiries on this subject in subsequent numbers of the Archives.

18. *Convulsions, treated by Frictions of Tartar Emetic.*—M. Debourge, of Rollot, in France, describes in the Archives Générales, a case of convulsions in an infant eight months of age, suckled by a woman who for some time had been a prey to violent grief. The gums of the child were not in a state to indicate that they were the source of irritation,—the abdomen was soft and not painful, and there were no symptoms indicating the existence of worms in the intestinal canal. Nevertheless, after resorting ineffectually to antiphlogistics, a vermifuge medicine was administered; but no worm was passed, and the disease, so far from being mitigated by it, was aggravated to such a degree that on the fourth day little hopes were entertained of the recovery of the child. Under these circumstances M. D. determined to resort to tartar emetic, agreeably to the Iatroleptic method. Two drachms of deuto tartarate of potass and antimony were dissolved in ten drachms of very hot water, and frictions with a flannel dipped in this solution were directed to be made all along the spinal region, and to the legs and thighs. After the fourth application the convulsions ceased to recur so frequently, and the attacks were of shorter duration than before. On the next, the infant had but three paroxysms,—the night following only one, which was the last. Four drachms of the tartrate were thus employed in the course of forty-eight hours, without producing either diarrhoea or vomiting. Only three pustules appeared; they were situated on one of the thighs, and did not make their appearance until after the cessation of the convulsions. The rest of the skin was only slightly red. M. D. asks whether the cure could be attributed to this therapeutic means. He is inclined to answer in the affirmative; but adds, very properly, that nature operates sometimes wonderful cures!

19. *Large doses of Ipecacuanha in Dysentery.*—Mr W. Twining, in a sensible paper inserted in a late number of the London Medical Gazette, strongly recommends the employment of "ipecacuanha in very large doses, for the purpose of relieving tenesmus and irritation, restoring a healthy state of the alvine evacuations, and in more remote stages of the disease, promoting the healing of intestinal ulcers."

Mr T. acknowledges that ipecacuanha has long been employed in the cure of intestinal profluvia, and that its utility in alleviating some of the symptoms attending those diseases seems, to a certain extent, generally admitted. But he adds, that the mode in which it is usually exhibited induces him to believe that no great reliance has been of late years placed in this remedy, although it was originally introduced to the notice of the profession in Europe, as a medicine of the greatest efficacy in the cure of dysentery. "A reference to the history of the remedy may satisfy us that it has been held in estimation in the cure of that disease, just in proportion as it was administered in large doses; and it was formerly sometimes prepared by boiling, so that the emetic properties of the root were destroyed; whereas, when given in small doses, it has been considered of less efficacy, and in severe cases is now generally looked on as an adjuvant of minor importance, the benefits appearing to belong, in a great measure, to the other remedies with which it is combined."

Mr T. recommends the remedy to be given, combined with a bitter extract, whereby vomiting is counteracted. "I have generally," he remarks, "used the gentian for this purpose, and by prescribing these two remedies in nearly equal proportions, we may, if requisite, give from six to twelve grains of ipecacuanha without often exciting nausea." "The remedy appears advisable in the early stage of almost all ordinary cases of acute dysentery; in the treatment of which

the first object (after adequate bleeding) is to clear out the bowels by a dose of castor oil; twelve hours after this has operated freely, the patient should take six grains of powder of ipecacuanha, with four grains of extract of gentian, and five grains of pil. hydrarg. in three pills, which are to be repeated every night at bed time, and at daylight in the morning; a dose of compound powder of jalap (dr. i.) is given daily at eleven o'clock in the forenoon, but if the patient be of a very irritable habit, dr. ss. will be sufficient for a dose. By these means we may soon procure a cessation of all the distressing symptoms, and it is then sufficient to continue six grains of ipecacuanha, with four of the extract of gentian, every night, giving a smaller dose of compound powder of jalap, or a moderate dose of castor oil every morning, for four or five days more."

20. *On the efficacy of Belladonna in a case in which the evacuation of fecal matter was attended with much pain.*—Dr De Laporte, of France, relates the following case in the *Journal Universel et Hebdomadaire*, No. 4, 1st volume.

Mrs R. aged thirty years, and of lymphatico sanguine temperament, had experienced great difficulty in having alvine evacuations since her first accouchement, at which the application of the forceps was resorted to. She attributed her complaint to hemorrhoids, because she had suffered much from costiveness during her pregnancy. The pain during each stool was excruciating, and the patient's health much deranged. She refused to submit to an examination, and Dr De Laporte presumed from the analogy of the symptoms to those of other cases he had seen, that the patient laboured under a fissure, and a spasmodic contraction of the anus. He prescribed the application of the ointment of belladonna to the anus,—a remedy which he had already successfully employed in similar cases. The success was complete, and in a short time the patient was radically cured. Since that period she has borne two children without experiencing a return of the complaint.

The thirty-sixth number of the *Medical Gazette*, of Paris, contains an account of a case of spasmodic stricture of the rectum, in which the same remedy was employed successfully by M. La Borderie.

21. *Treatment of Venereal Diseases.*—Dr William Donnelly, Surgeon in the royal navy, has published in the number of the *Edinburgh Medical and Surgical Journal* for January 1831, the results of his observations on the above subjects, while on board his majesty's ships *Hussar* and *Sparrowhawk*. In the first of these vessels there occurred sixty-one cases of primary venereal affections, from March 1827, to the end of July 1830. The general treatment of these was rest, low diet, abstraction of liquor, and occasionally a saline cathartic. In buboes, cold applications were used to prevent suppuration; and when this result took place, with sinuses, the swellings were opened by incision, and occasionally by caustic. Excoriations were treated by sulphate of copper, or nitrate of silver. Warts were removed by the knife, and by nitrate of silver. Seventeen cases of chancre were treated with ordinary dressings, by nitrate of silver, sulphate of copper, or sulphate of zinc, occasionally without particular regimen. Twelve cases complicated with bubo, suppurating and non-suppurating, were treated by confinement and local remedies, as indicated.

Of the sixty-one cases treated in the *Hussar*, without Mercury, four only were affected with secondary symptoms.

Of twenty-six cases of primary venereal affections, which occurred in the *Sparrowhawk*, in England, Sicily, and at Naples, in which the general characters were excoriations, chancres and buboes, suppurating and non-suppurating, and which were treated without mercury, they were on an average fourteen days on the sick list, and eighteen days under treatment. In only one did secondary symptoms supervene and that two months after the cure of the primary affection, and in the remaining twenty-five, which were watched for fifteen months, no symptoms were observed to follow during that period.

Dr Donnelly remarks that among the whole number of cases treated in both

vessels, he met with six in which secondary symptoms appeared without being preceded by those which are regarded as characteristic of syphilitic action, or after those symptoms were supposed to have healed entirely. In an early part of his essay he appears to laugh, and we believe with perfect reason, at those physicians who ascribe almost all varieties of disease to a latent uneradicated syphilitic or gonorrhoeal virus, and will not believe the most solemn asseverations of patients never having had venereal disease; or who, if compelled to do so, will trace the supposed poison, for its existence cannot be demonstrated to ancestors, not only of the first, but of the second and third degree. He cites an interesting case of finely characterised syphilitic ulceration of the throat, soft palate, &c. with caries, and finally loss of the bones of the nose and face, which by the gradual progress of the disease, terminated fatally about six or seven years from its commencement. The girl, who was the subject of this case, was admitted into the Halifax (N. S.) poor house, in an early period of the disease. She was then between twelve and thirteen years of age, and with a hymen large and entire, and without any genital affection. Neither mercury nor any other means arrested the slow but regular progress of this disease. If it were syphilis, Dr D. asks, whence was the virus derived? And if syphilitic, why not controllable by its assumed antidote, mercury?

Dr Donnelly presents two tables showing the number of patients treated for syphilis, in the Bermuda and Halifax hospitals; in the former, from 1809 to 1829 inclusive (excepting 1816, 17-18). In the second, from 1809 to 1819 inclusive. They were all treated with mercury, and the results, when compared with those obtained by Dr D. in the vessels we have mentioned, are far from being satisfactory. The average period, for example, in 348 cases, before a cure, invalidation, or death, took place, was sixty-one days,—the number of cured being 272, that of invalidated or dead being 68. By examining, on the other hand, the table presented of the patients in the Hussar and Sparrowhawk, we find that the others were very nearly three times as long under treatment, and three or four times longer on the sick list. From all these circumstances Dr D. concludes, that "as far as shortening the time of cure is important, the advantage is much in favour of the non mercurial treatment, which is at least gratuitous, where sores heal without its aid, whilst the inconvenience to the patient and service is infinitely less. With regard to secondary symptoms he is inclined to think, that five out of eighty-one is a smaller proportion than would have followed full mercurial courses in them all, or perhaps would succeed to such a liberal use of mercury in any equal number of persons as happened to some of the secondary cases of the Hussar and Sparrowhawk." It must be remarked here, that most of the cases of secondary symptoms occurred in individuals who had been salivated for complaints not syphilitic; from which we may conclude that these symptoms may be the consequence of the influence of mercury, as readily as the syphilitic poison.

IV. MEDICAL JURISPRUDENCE.

22. *Alleged poisoning with Arsenic. Counter Report.*—In our last number we gave the details of a report containing experiments, and the opinions deduced therefrom, by a board of medical jurists, consisting of a physician, a surgeon, and an apothecary, on the case of a person dead under suspicious circumstances. The report concluded by the board affirming their belief, that the stomach and intestines of the deceased contained foreign matter, which, by its colour, consistence, and crackling on pressure, seemed to resemble the *yellow sulphuret of arsenic* or *orpiment*. In consequence of this report, two persons suspected of being guilty of the administering the poison were arrested and put in prison, but the evidence not being deemed sufficient, a new report was required. M.M. Rostan, Marc, Orfila and Barruel, were accordingly entrusted with this task, and so soon as their opinions were ascertained, the accused were set at liberty.

The demand made of this commission, consisting of the above named gentlemen, was, 1. To examine the medico-legal report made at D—— the 3d July 1829, by M.M. in a case of suspected poisoning, and to give their opinion respecting it.

2. To submit to chemical analysis a part of the various matters which made the subject of the report; to prepare a statement of their labours, and, at the same time, to give their opinion respecting the experiments of M.M. the nominated board of inspection at D——.

We omit the preliminary formalities of expression in the report of the new commission until they state that, after having been duly sworn, they received the following from the commissary of police.

1. The report of the board at D——.
2. A box having the seal of the king's attorney.

No objection is made by the new commission to the first part of the report as contained in our last number. But as to the chemical experiments of which the second part consists, as they are not deemed to prove conclusively that the matter, found in the digestive tube of the deceased, B——, was really yellow sulphuret of arsenic, the commission think it advisable to examine for themselves, with all possible care, the portion of this matter now transferred to them, and a part, of course, of that on which the board at D—— had experimented. The box above mentioned was accordingly opened in the presence of the commissary of police and found to contain,

1. A small jar, labelled, *A piece of stomach on which some yellow points are seen.*
2. A parcel enveloped in paper, on which was written, *Dried stomach from which have been taken yellow particles.*
3. A little flask, closed with a ground glass stopper, and labelled, *Mucous matter contained in the stomach, with a little alcohol.*
4. Finally, a flask closed like the former, and labelled, *Matter contained in the small intestines.*

The commission proceeded on successive days to the examination of the above substances.

1. As regards the *piece of stomach on which some yellow particles were observed*, the commission found some small abrasions of the mucous surface; but they could not, after the most careful inspection, aided by a microscope, discover any thing resembling yellow sulphuret of arsenic; they only find some very minute white particles, which being taken up on the point of a penknife, and put on blotting paper, gradually melted on the application of a mild heat and penetrated the paper, rendering it at the same time transparent—evidences sufficiently clear that these small white points were nothing but fat. This part of the stomach was soon dried by exposing it for some hours to the sun's rays. It was then divided into small pieces, and gradually projected into a crucible of platinum, containing nitrate of potassa in fusion; these were soon rapidly destroyed by entire combustion. The residue was white and fused. Put into distilled water, it was soon entirely dissolved, with the exception of a small portion of the phosphat of lime. The solution when filtered was limpid and colourless; it was treated by a slight excess of nitric acid, and then evaporated to dryness; in order to drive away the nitrous acid and the excess of nitric acid, the saline residue was dissolved in water, put into a matrass, and boiled for half an hour. A stream of sulphuretted hydrogen being in the mean time passed through it, the liquid remained perfectly colourless, and the addition of hydrochloric (muriatic) acid did not cause any precipitate.

The inference from this experiment is, that the portion of stomach, examined as above, does not contain the slightest portion of arsenic.

The alcoholic fluid in which the stomach had been preserved was poured out and passed through a filter: separated from some floculi of animal matter, and treated by excess of sulphuric acid, so far from acquiring any colour, it lost the amber hue which it before exhibited. Hence, it is evident, that this fluid does not hold in solution the smallest portion of a metallic poison.

2. Examination of the matter designated as *dried stomach, from which had been removed yellow particles.*

This viscus, by desiccation, had acquired a brown colour, and was thinner than natural and in some parts as thin as parchment. On examining its internal surface through a microscope some white particles were seen having the appearance of very small saline agglomerations. These small points are only broken with the nail pressed on the membrane itself and leave a small white mark. Portions of the membrane on which these white points were found in large quantities were detached and placed in a flask and boiled during fifteen minutes with distilled water. The filtered liquor, being perfectly colourless, was treated with an excess of sulphuretted hydrogen but did not undergo any change of colour; finally, the tongue being applied to some of these white particles on another portion of dried stomach did not detect any disagreeable taste.

These two experiments evidently show that these white points are not part of any metallic salt nor of poisonous vegetables, these last always having a bitter taste.

3. Examination of the *mucous matters contained in the stomach, together with a little alcohol.* This matter is viscous and contains floculi of a yellowish grey; diluted with an equal quantity of water and shaken up and then allowed to rest for ten minutes, the whole was poured out on a filter and nothing remained adherent to the flask any way resembling mineral substances. The flocculent matter which remained on the filter was put apart, and the filtered liquid being treated by an excess of sulphuretted hydrogen, and some drops of hydrochloric (muriatic) acid exhibited no change of colour; whence it follows clearly that it exhibits no trace of an animal poison.

4. Examination of the *matters contained in the small intestines.* These matters consist of a brown fawn coloured liquid, of a thick consistence and very turbid. When the flask was uncorked there was a great emission of gas of an insupportable fetor. This liquid, weighing about two ounces, was diluted with the same quantity of distilled water and freely shaken up. At the bottom of the flask there was then observed a number of small points, weighty, and of various colours. On being transferred to a watch crystal, they were several times washed, and the water of each washing was poured on the filter with the first liquid.

Examination of the *granulated matter.* This matter was composed of the union of black molecules, and of yellow ones with a slight brilliancy, and of white molecules. Heated in a matrass with distilled water to the point of ebullition for ten minutes, it underwent no change of volume or aspect. The liquid was entirely limpid. Treated with sulphuretted hydrogen and some drops of hydrochloric acid, it underwent no change of colour.

On examining with a microscope the matter which was not dissolved and which had been dried, the black molecules appeared to consist of coarsely pulverised charcoal; the yellow ones had the semblance of a yellow calcareous sand, and the white molecules appeared to consist of white sand.

All these little grains, like particles, being introduced into a very small tube closed at one end and heated, there was disengaged a vapour having both the odour of fat and of animal matters when burning. The tube was carried to a red heat, then cooled; but the matter did not seem to be diminished in volume; it was of a fine black colour. At the middle part of the tube, a small band of a yellowish brown colour was formed, having the appearance of a pyrogenous oil. The tube being cut in two by a file, the black residue was extracted, and when brought to a red heat in contact with the air, it became white without any sensible change of volume. The yellowish band condensed in the middle of the tube was treated by very weak ammonia, but was in no wise dissolved. The liquid, having been saturated with hydrochloric acid, did not give any deposit. Finally, the tube opened longitudinally, and, heated on burning coals, did not emit any arsenical odour.

The liquid from the intestines, from which the granulated precipitate had been separated, was filtered, and, having been treated by the method fitted to detect the smallest traces of arsenic, gave no evidence of any such trace.

The filters, on which the flocculent matters remaining after filtration were deposited, 1, from the liquid in which had been preserved the *piece of stomach exhibiting some yellow points*; 2, from the filtration of *mucous matters contained in the stomach*; 3, from *matters contained in the small intestine*, were all projected in very small pieces at a time into a platinum crucible containing an excess of *nitrate of potassa* in fusion, and in which they were very soon burnt. The residue of this combustion must necessarily contain in the state of *arsenate of potassa* all the arsenical products whatever they may have been, if those matters had contained the slightest portion of this metal. This residue was treated by distilled water, in which it was dissolved with the exception of a sediment, which on examination was found to be formed exclusively of a mixture of phosphat of lime, resulting from the animal matters, and silica coming from the fibres. The filtrated liquor was perfectly limpid and colourless; it was strongly alkaline. A small portion of this liquor treated by the nitrate of silver gave rise to a precipitate of a white with a slight red shade. This precipitate treated with nitric acid was in great part dissolved with a slight effervescence: the portion which was not dissolved was *chloride of silver*.

A slight excess of nitric acid was added to the portion of the remaining liquid. There was a disengagement of nitrous acid. Evaporation to dryness was now carried on, in order to drive away all the nitrous acid and the excess of nitric acid, and the residue, being treated by water, was completely dissolved, with the exception of some flocculi of silica which were separated by filtering. This liquid was boiled for half an hour, and, during all that time, it was traversed by a current of sulphuretted hydrogen gas, after which were added two or three drops of nitric acid which produced neither any change of colour nor precipitate.

It results from the operations described above, that not only did the new commission not find any trace of arsenic in the different matters submitted to their inspection and experiments, but they were also unable to detect any other poisonous substance.

The commission next proceed to express more formally their difference of opinion with the former board at D——, and to comment critically on the inferences of these latter. The fracture or crepitus, on pressure with pincers, spoken of by the board as one of the evidences of the yellow particles being yellow sulphuret of arsenic, is not an evidence in fact, since the sulphuret in question, when natural, is always seen in impalpable molecules; and when artificial, it is formed of laminae adherent to one another, and so flexible as to be divided with difficulty; and when we take one of these laminae it will twist rather than break, and when broken, it is done without noise.

The gentlemen at D—— ought, says the new commission, to be aware that the reagents of copper, such as the ammoniacal sulphat, are, of all those known, the least fitted to test in any liquid the presence of the oxide of arsenic. In fact, if we pour some drops of the ammoniacal sulphat of copper into distilled water, it is decomposed; the liquor becomes turbid, and a blue precipitate is formed; and if to the distilled water we add a drop or two of a yellow liquor, such as a solution of the chromate of potassa or the tincture of saffron, in such a manner, however, that the water shall be barely discoloured, the ammoniacal sulphat of copper is equally decomposed, and the turbidness shows of a fine green. But if it be filtered, the precipitate which remains on the filter, when washed, is of a clear blue colour. Now we cannot admit as proof of the presence of arsenic in the matters examined by the board at D——, the different green colours, which they obtained by trial with the reagents of the salts of copper, since they merely say that they have obtained a green colour with these reagents; had they perceived a precipitate, they would have collected it and ascertained its colour.

As to the ammoniacal nitrate of silver employed by them, it cannot be admitted as showing the presence of the oxide of arsenic, for the arsenite of silver is excessively soluble in ammonia, and besides, this arsenite is of a yellow colour, and the arseniate alone is red.

The examiners at D—— say, “that some of these particles, which in their

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low sulphuret of arsenic, when boiled with distilled water became yellow sulphuret of arsenic, whether natural or artificial, under the same conditions in boiling water; the natural sulphuret does not even lose its yellow colour, it is evident, that if the yellow particles on which these gentlemen were so much insisted, were white by boiling in water, we are to conclude that they are not the yellow sulphuret of arsenic.

The experiments made by these gentlemen on the matters collected in the intestines (see page 232 of our last number) lead to the following result: we admit the hypothesis that the matter contained sulphuret of arsenic. One of two things; either they added enough of nitrate of potassa to decompose the matter obtained from the intestines, or they did not add

the first supposition, as the experiment was made in a crucible, consequently heat, the sulphuret of arsenic would have been converted into arseniate of potassa; in this case, the reagents of copper would have been of a blue colour, at the same time, the nitrate of silver of a red, for it is thus that these reagents.

The second supposition, that there was not enough of nitrate of potassa to decompose the carbonate of potassa, proceeding from the decomposition of the organic matter, would have decomposed the sulphuret, and the residue of charcoal would have decomposed the oxide of arsenic, and the arsenic would be completely volatilized in a metallic state. Whichever supposition we admit, as we are assured that the matter in question contained but a small portion of sulphuret of arsenic, and that there were seen but very small pieces through the microscope, the liquid formed by the solution of the cindery powder contained necessarily in either case, some carbonate of potassa; now, this salt precipitates abundantly the nitrate of silver, and this precipitate, which is of a dirty white, is carbonate of silver, which, as well as the arseniate of silver, is excessively soluble in nitric acid.

On the manner in which the matter, taken from the intestines and collected on the filter, was examined by the board at D— (see p. 233, last No.), the new commission make the following comments. It is conceivable enough that any matter whatever, which should contain sulphuret of arsenic, should, by being burned in oxygen gas, be converted into sulphurous acid and oxide of arsenic, which produces white vapour, but they know that this white vapour is speedily deposited on the sides of the vessel in which the combustion had been performed, and that there is no need of a current of sulphuretted hydrogen for that purpose; also, that the sulphuretted hydrogen causes this oxide to pass to the state of a sulphuret of arsenic, and not partially so; but we cannot well understand why the yellow liquid at the bottom of the matrass through which had been passed a current of sulphuretted hydrogen, should not have precipitated the black colour of the salts of copper as well as of the ammoniacal nitrate of silver. But in strictly supposing that this liquid did not contain sulphuretted hydrogen, it would be sufficient for the liquid to be of a straw colour, in order to explain the change of the salts of copper to a green colour.

A conclusive experiment, say the commission, and on account of its importance, we repeat the expressions from our last number, would have been the reduction of the small yellow particles into metallic arsenic,—an experiment not attempted by the gentlemen at D—, although we know that it may be performed on exceedingly minute quantities.

In conclusion, the new commission have only been able to discover one fact in the chemical part of the report of the board at D—, which might have led its authors to suppose that they were in the way of detecting the cause of poisoning; it is the alliaceous odour disengaged from one of the small yellow points obtained by them from the stomach, when placed on a burning coal; but all the others which follow do not by any means strengthen the grounds of their first opinion. The counter report is signed, Rostan, Marc, Orfila, Barruel.

The court having decreed that there was no ground for farther proceedings, the accused were set at liberty.

V. MATERIA MEDICA.

23. *Action of Acids upon Salicine.*—In a former number of the Journal we stated that salicine had been found not to possess alkaline properties. It appears, however, from the further researches of M. Peschier of Geneva, detailed in the *Journal de Chimie Médicale* for November last, that, though not in its ordinary state alkaline, it is rendered so by the action of acids, with which, after having undergone the change, it unites to form crystallizable saline compounds. In order that this effect may take place, it is requisite that the acid should not be very greatly diluted. We give an abstract of the results obtained by M. Peschier.

Nitric acid poured on salicine speedily dissolved it. In about two hours the liquid was converted into a yellowish white, porous mass, in which, after some time, acicular crystals were observed to form. Having been exposed to the air for a few days, the mass assumed a rosy tint, which gradually passed into a lively red; and the same phenomena were always exhibited, however various was the quantity of acid employed. When a small quantity of acid was used, the product, upon being dissolved in water, was found to have no action on blue test paper, indicating the neutralization of the acid. The inference was that the salicine had undergone some change of composition by which it was rendered alkaline, and had then united with the nitric acid to form a nitrate. This salt was obtained in a separate state by evaporating the watery solution to the consistence of a syrup, then dissolving the nitrate in alcohol, and concentrating the alcoholic solution.

Concentrated sulphuric acid immediately imparted to salicine a very lively red colour, which passed to a wine red, and even to a dirty rose colour upon the addition of too large a proportion of the acid. Diluted with five or six parts of water, the acid produced no change of colour in the salicine, but entered into combination with it in the same manner as when concentrated. By diluting the solution with water, saturating the excess of acid with carbonate of soda or carbonate of potassa, then evaporating to the consistence of syrup, and treating the residue with alcohol, a spirituous solution of the sulphate of salicine was obtained, which upon being concentrated yielded the salt in a crystalline state. This result was obtained whether the sulphuric acid had been originally added to the salicine in a concentrated or in a diluted state. In the former case the crystals were in the form of silky prisms, diverging from a common centre, and had a brownish colour; in the latter they took the shape of a prismatic vegetation, climbing up the sides of the vessel, and were white. The taste of the salt was very bitter.

Muriatic, phosphoric, and acetic acids formed salts in like manner with the salicine.

Having determined the existence of these saline compounds, M. Peschier endeavoured to separate the alkaline basis. For this purpose he separated the sulphuric acid from a solution of the sulphate by means of baryta-water, and having satisfied himself that no baryta remained in the solution, tested its character by means of turnsole paper previously reddened by an acid. The blue colour of the paper was restored, proving the existence of an alkaline substance in the solution. By evaporation, this substance was obtained in the state of prismatic crystals accompanied with white masses different from those presented by salicine, and having a very bitter taste without the aromatic flavour of the willow.

That the acids should effect such a change in salicine ceases to be remarkable, when we consider, that by the same agents sugar and gum are converted into acids, and starch into sugar.

24. *Quantity of Cinchonia and Quinia in the different kinds of bark.*—From the same number of the *Journal de Chimie Médicale* we extract the following results obtained by Mr Vilmann of Osnabruck.

100 parts of Carthagena bark yielded 8.90 parts of alkaline matter;

100 parts of Huanuco bark—an inferior variety of pale bark usually confounded in this country with the Loxa bark—3.5 parts of cinchonia;

100 parts of the “quinquina royal”—the royal yellow or Calisaya bark—5 parts of quinia; and

100 parts of the red bark, 6. parts of quinia and cinchonia.

The proportion of quinia in Calisaya bark, as above stated, is considerably greater than that obtained by Pelletiero Caventore. In the 5th volume of this Journal, p. 475, the results obtained by these chemists are stated to be 2.9 per cent of sulphate of quinia from good Calisaya bark, and 1.5 per cent from the inferior kinds.

25. *Magnetism a remedy in various diseases.*—The following is the substance of a note transmitted by Dr Keil to the French Institute at its sitting of the 20th of September, and published in the number above referred to of the *Journal de Chimie Médicale*. The Doctor has discovered a mode of preparing magnets much more powerful than any hitherto in use. The strongest magnets before known were not capable of supporting more than 40 kilogrammes (about 107 lbs. troy), and weighed themselves from 40 to 45 kilogrammes. That exhibited by the author to the academy had a power of 150 kilogrammes, and weighed only 20.

In his practice as a physician in Germany, Dr Keil has made numerous experiments with very strong magnets; and has obtained the most happy results in a multitude of nervous diseases which had resisted the ordinary therapeutical methods. By simply passing his magnets over the parts affected, he has succeeded in curing *gout, tic douloureux, recent and chronic rheumatic pains, epilepsy, spasms in the stomach, whooping-cough, nervous weakness, rheumatic deafness, swelling of the cervical glands, menstrual irregularities, headache, convulsive muscular contractions and toothach*. We give the list exactly as we find it.

As magnetism acts only upon the nervous system, it is without effect when the disease depends upon organic lesion. The author has also sometimes, but very rarely, found it ineffectual where no lesion was apparent.

Numerous acute nervous diseases cease instantaneously upon the employment of the magnet. In chronic cases it is often necessary to repeat the application once or twice a day, for several days. Should the disease resist the remedy for a month, a cure by the magnet is hopeless.

In healthy individuals uneasy sensations, and even vomiting, may be produced by passing the magnet over the surface in suitable directions.

26. *Economical method of preparing Distilled Water.*—In the preparation of distilled water, according to the ordinary process, it is necessary to throw away a very considerable portion of that which first comes over, in consequence of the carbonic acid which it contains. At least one-sixth of the water must be distilled, under ordinary circumstances, before it comes over sufficiently free from carbonic acid to produce no precipitate when added to the solution of sub-acetate of lead. There is consequently a loss of time and an expense of fuel in the process, which it is desirable to avoid. M. Guéranger, an apothecary of Mans, in a note upon the subject communicated to the *Journ. de Chim. Médicale*, states that he attempted to drive off the carbonic acid by boiling the water for a short time with free exposure to the air, before commencing the distillation; but without success, as the first portions, which he obtained upon submitting the boiled water to the distilling process, were considerably impregnated with the gas. It then very naturally occurred to him that the acid might be fixed by means of lime, and the whole product of the distillation be thus rendered fit for use. He accordingly mixed some lime with the water previously to distillation, and examined the result. The first product rendered the solution of sub-acetate of lead very slightly turbid, owing probably to the carbonic acid contained in the air of the apparatus; for after a very short continuance of the process the water

was obtained entirely free from the acid, and the whole was sufficiently pure for use.

27. Dangerous effects from the external application of Stramonium.—The following case is highly instructive, and will serve to show that the practice, so much in vogue among the vulgar in this country, of surrounding the wrists of the sick with the leaves of the Jamestown weed, may not always be so innocent as we are apt to suppose it. We extract the case from the *Journ. de Chim. Médicale* for December 1830. One of the workmen in a distillery fell into a boiler containing hot water, from which he was withdrawn with both his legs scalded as high as the knee. The leaves of the *Datura Stramonium* were applied by a village practitioner, over the injured part, with the desired effect of calming the violence of the pain; and when the patient was visited by Dr Borzenkof, he was found in a favourable condition. The doctor directed that the blister which had formed should be opened, and the parts dressed with Goulard's cerate. Scarcely, however, had he left the patient, when the empyric prescribed a new application of stramonium upon the denuded surface. The patient was thrown into a state of delirium, approaching to madness. His mouth became extremely dry, his eyes fixed and without lustre, his senses much blunted, his pulse intermittent and almost insensible. The empyric, mistaking the condition of the patient for an attack of fever, employed several exciting remedies. Such was the state of things on the second visit of M. Borzenkof, whose astonishment at the change ceased when he beheld both the limbs surrounded with the thornapple leaves. He instantly caused the dressings to be removed, the sores to be well washed, and Goulard's cerate to be again applied. The patient again became calm; but he was so feeble that at every dressing he complained of giddiness such as is felt by a man recovering from a state of drunkenness. After some time he was perfectly cured; but there is no doubt that he would have fallen a victim to ignorance had not the poisonous action of the narcotic been seasonably arrested.

28. Hydrocyanic Acid in Cheese.—It appears from the experiments of Dr Witting that the poisonous effects, which are occasionally experienced from cheese, do not necessarily depend upon extraneous matters introduced, but may arise from the spontaneous development of hydrocyanic acid in this article of diet. When exposed to the action of water and of the sun, cheese after a short time exhales an ammoniacal odour. If now treated with alcohol, it affords a tincture, which, upon distillation, yields traces of hydrocyanic acid. This acid appears to exist in the cheese in the state of hydrocyanate of ammonia, and is not found at a more advanced period of the fermentation. Those spontaneous changes, by which it is developed, arise from the presence of moisture; and cheese never acquires poisonous properties, if, in its preparation, care has been taken to drain it well, to salt it sufficiently, and to dry it at a moderate temperature. These remarks are extracted from a note by Julia Fontenelle, in the *Journ. de Chim. Médicale*, for December 1830.

29. Savine employed in Uterine Hemorrhage.—Though savine has long been known to exert a powerful influence over the uterine actions, and has been employed in amenorrhœa, and in leucorrhœa, we are not aware that it has attracted general notice as a remedy in menorrhagia. In the *Revue Médicale* for October last, we find a note extracted from a German Journal, recommending it highly in passive uterine hemorrhage, and ascribing the credit of the application of the medicine to Dr Wedekind. Dr Feist has found it especially beneficial in cases in which the hemorrhage has been of long standing, and the blood thin, discoloured and fetid. The formula employed by Dr Feist is the following:—*Take of powdered savine leaves three drachms; extract of savine two drachms; distilled oil of savine a scruple; mix and divide into pills, each weighing three grains.* These are to be taken three times a day in the quantity at first of four pills, afterwards five, and ultimately as many as ten. A case is related in which the favourable effect of savine was very obvious, but we have not room to copy it.

80. *Hyoscyamus Niger*.—We are happy to be able to express our acknowledgments to the London Medical and Surgical Journal for the following facts contained in a communication read by Jos. Houlton, Esq. in December last, before the London Medico-Botanical Society. Mr Houlton asserts, contrary to what is stated in most modern works on botany and materia medica, that *hyoscyamus niger* is a biennial plant, and is in a fit state for medical purposes in the second year only of its duration, when in flower, or according to the excellent general rule of the Royal College of Physicians, *postquam flores expansi fuerint, et antequam semina maturescant*. The leaves at this period differ very much from those of the first year. They are cauline, sessile, very clammy and fetid, and contain a large proportion of extractive matter. The leaves of the first year are radical, petiolated, with very little clamminess, without fetor, and contain considerably less extractive matter than those of the second year. The tincture from the mature leaves is of a deep greenish brown and not clear; the tincture from the first year's leaf is much paler and clearer; the difference in their relative strength is great. Now the effect of a severe winter is to destroy the plant; and thus cause the market on the following season to be supplied with leaves of the first year's growth, and of much inferior virtues: and it is not improbable that the immature leaves are often employed in ordinary seasons from ignorance of their comparative inertness. We can thus readily understand why the *hyoscyamus* is of such variable strength; and may reasonably hope that with a knowledge of the cause, the defect will be remedied. As the plant, though not a native of this country, has been introduced, and is capable of being cultivated, it is desirable that we should take the remedy into our own hands, and cease to depend upon the markets of England for a supply.

We find that the plant is stated to be *biennial* in Bigelow's American Medical Botany.

81. *Croton Oil as an External Irritant*.—We have received from London a monograph upon the *croton tiglium* and its expressed oil by Michael James Short, M.D., from which we extract the following remarks. Having given a botanical account of the plant, and a history of the medical application of the oil, with cases illustrative of its highly beneficial effects as a purgative in a variety of diseases, the author goes on to say that he has employed it externally as an irritating liniment. "I am not aware," he observes, "that its application in this way has been practised or noticed either in this country or India. I am, however, decidedly of opinion, from the experience I have had of its efficacy as a counter-irritant, that it is preferable to all those now in use; superior to the cantharides in the quickness and certainty of its operation, and in the permanency of its effects; to the ointment of tartarized antimony, for the same reasons, as well as for not producing that excessive pain and constitutional irritation which usually attend the operation of the last preparation; and to the common sinapisms, because it stimulates the skin much sooner, diffuses more warmth, and can be better regulated as to the extent of its effects. I have employed it in this way in acute and chronic rheumatism, in gout, in *tic dolooureux*, in glandular and other indolent swellings, and in all cases with the most satisfactory result. In cases of pulmonary affection, where it has been desirable to keep up a permanent irritation on the chest, I have found it to answer the purpose infinitely better than either the *lyttæ* or the tartarized antimony, producing neither the inconvenience nor uneasiness of the one or the other. I am of opinion also that it is greatly superior to and more beneficial in its effects than these medicines, from the nature of its operation; as it is pure pus which is secreted from the skin in consequence of its application, which secretion can be extended *ad libitum*, each pustule thus becoming, in some measure, a separate issue; whereas it is merely serum which is discharged when a blister is applied, and there is little discharge at all from the ointment."

Making all due allowance for the paternal partiality of the above remarks, we can readily admit that the author has made a valuable addition to our stock of

external irritants. We fear, however, that the high price of the oil in this country will prevent its general use.

82. Rhatany used to prevent Abortion.—A case is recorded in the *Journal Univ. des Sciences Médicales* (t. LIX, cahier 176), in which this astringent was successfully used in a case of threatened abortion. The lady had previously twice miscarried, notwithstanding the use of blood-letting with perfect rest. On the third attack, after the occurrence of a slight hemorrhage from the uterus, she was put to bed, but instead of being bled was placed upon the use of rhatany, of which she took in less than sixty hours one hundred and thirty-two grains, with twelve grains of alum. The hemorrhage was arrested, under this treatment, on the second day, and the patient afterwards passed through the regular period of gestation, and was delivered of a healthy child. The author, M. Chauffard, physician to the hospital at Avignon, appears to be in doubt whether to attribute his success in the case to the use of rhatany, or to the omission of blood-letting.

83. Anti-epileptic powder of Dr Kahleis.—In the *Archives Generales* for October last, we find the following formula extracted from the *Journal der practischen Heilkunde*, recommended highly by Dr Kahleis as a remedy in epilepsy.

Take of the root of mugwort, *artemisia vulgaris*, two ounces; make a strong decoction with water, and strain; to six ounces of this decoction add ten grains of powdered nitrate of silver; separate by filtration the precipitate which forms, dry it in the shade, and preserve it for use. The powder thus obtained should be mixed with a sufficient quantity of sugar, and then divided into sixty equal parts. One of these is to be given as a dose morning and evening.

VI. SURGERY.

84. Amputation at the Knee Joint.—Injuries of this joint have been regarded as among the most serious accidents to which the human frame is liable, and hence surgeons have discouraged any operation involving the cavity and ligaments of this articulation unless absolute necessity require the interference. The reasons have not been very evident, and some authorities have actually denied that any peculiar danger existed. M. Velpeau, surgeon of l'Hôpital de la Pitié, has lately embraced the same opinion; and, at page twenty-four of the twenty-fourth volume of the *Archives Générales* for September 1830, has detailed a history of the amputation of the leg at the knee joint, and the facts which have induced him to recommend and perform it. He states that the ancients always amputated at the joints, as they were ignorant of any suitable means to arrest hemorrhage, &c., but that since the division in the continuity of the limb has been adopted, the former operation has usually been condemned by writers with the exception of J. L. Petit, De Hoin and De Brasdor. Of late, M. Blandin, in the *Dictionnaire de Chirurgie Pratique*, has revived the arguments of Brasdor in its favour. The operation has, however, been performed occasionally; and the author quotes two cases from Petit, and one from Hoin, in which the operation was successful; and it would appear that our countryman, the late Dr Nathan Smith, deserves the credit of first reviving attention to this operation, and of insisting on its comparative safety and advantages. A case, in which he successfully operated in April 1824, is alluded to in this *Journal*, vol. i. p. 456, and is quoted by M. Velpeau. In the same year, M. Richerand operated in the same manner, and with success, and other cases are quoted from authors. M. Blandin has detailed in the *Dictionnaire Pratique*, &c. a case of his own; the patient, however, died, not from the state of the cartilages, ligaments or bones of the condyles, but from phlebitis. Hence it appears, that in nine authentic cases, one only has perished. M. Velpeau relates some similar operations which he has performed. The first was in a case of necrosis of the tibia, in which the head of

the bone was also involved. The patient was nineteen years old, and submitted to the operation on the 14th of January 1830. "No accident supervened, and, although there remained a transverse line an inch in breadth which the flaps could not cover, the cicatrix was complete at the end of two months. Now, this patient enjoys good health, and can sustain the weight of the body with the same facility as if he had submitted to an amputation in the continuity of the thigh." A second operation of amputation at the knee joint M. Velpeau executed in a case of gangrene of the leg from a compound fracture, accompanied by much irritation, fever and delirium. There was fever for two days after the operation demanding venesection once or twice. Afterwards there was no accident until the sixth or seventh day when an erysipelas supervened; this was successfully managed, and by the sixtieth day the cure was complete. The operation was performed about the 30th of May 1830. A third case of the same kind is also quoted, in which a young man, who was operated on in childhood, was using with great convenience a wooden leg, and could walk as easily as if the amputation had been below the knee.

M. Velpeau attempts to set aside the objections advanced. 1. The dangers, supposed to arise from the exposure of large osseous and cartilaginous surfaces are, he says, chimerical. The bone is not exposed, and "the cartilaginous plate which covers the condyles is a protecting lamina altogether insensible, which will remain for weeks exposed without the least inconvenience resulting; the pretended synovial membrane with which Bichat has gifted it, not existing, it is absolutely impossible that it should inflame." M. Velpeau says, that these observations respecting cartilages and their synovial membranes he has proved by a series of observations which will make the subject of another work. We will therefore wait for these facts, merely observing that the ideas are opposed to analogy, to past anatomical examinations, and to the experience of surgeons (Dr Smith included), who speak of adhesions of synovial membranes covering cartilages. Dr Smith says, "the synovial membrane (after amputation at the knee joint) immediately assumes the adhesive inflammation, and union is speedily effected. The stump is more useful, as the lower part is formed by the patella, which becomes ankylosed to the former."

2. The idea that an enormous wound is produced, which cannot be covered by the soft parts, is erroneous, as the whole operation consists in a division of the skin and ligaments, and if two or three inches of flap be preserved, the whole can be covered. 3. It is also a mistake to suppose that any disadvantage results from exposing tissues which do not readily inflame, and cannot speedily form a solid cicatrix as in a fleshy portion of the limb. The skin is fully adequate for the formation of a good cicatrix. 4. The idea, that it is more painful and difficult than amputation of the thigh, is no better substantiated than the preceding objections; and 5. The accusation, which is most insisted on, that the patients, after the cure, will be left in the same state as those who have suffered an amputation of the thigh; that is, they will be forced to walk, not by means of a wooden leg, but by means of a thigh piece (*cuissart*) in addition, is refuted by experience, which proves that the wooden leg answers every purpose.

The advantages of amputating at the knee joint, rather than on the thigh, are many. After amputation of the thigh, the point of support must be at the ischium; the motions at the hip joint are almost annihilated; progression is effected as if the coxo-femoral articulation was ankylosed. After disarticulation at the knee, on the contrary, the point of support is at the lower extremity of the femur, the thigh preserves all its motions, and the patient is in the same state as if he had suffered an ankylosis at the knee joint. The wound in this last operation interests almost solely the skin; it involves no bone, no aponeurosis; the surface to be covered is convex, regular, free from all asperities, and there is no fear of muscular contraction: in the former operation, the solution of continuity involves the large aponeurotic covering of the limb and its numerous concentric laminae, numerous and large muscles, a bone which easily becomes denuded, the division of which is accompanied with a commotion not free from danger, and finally, all the connecting cellular tissue. At the knee, a single artery of any magnitude is divided; on the thigh, numerous vessels besides the main artery must be secured.

As to the method of operating, J. L. Petit advises the patella to be removed, but Velpeau observes it should always be preserved; the muscles draw it up and very soon fix it above the condyles where it neither retards cicatrisation, nor the subsequent utility of the stump. Dr Smith, as above noted, says the patella becomes ankylosed to the lower part of the femur.

M. Velpeau purposes to divide the skin by a circular incision, two or three fingers' breadth below the patella, and in dissecting the flap upwards, to preserve as much of the cellular and fatty tissue as possible; then to divide the ligament of the patella and afterwards the lateral ligaments. The surgeon should then separate the osseous surfaces by slightly bending the leg, detach the semilunar cartilages, divide the crucial ligaments and finish by a transverse incision, ~~on~~ a line with the reversed integuments of the vessels, nerves, and gastrocnemii and popliteus muscles. The hemorrhage being arrested, the flap is to be brought down and made to approach from side to side, so as to meet in a line corresponding to the sinuosity between the condyles.

The integuments will thus cover the condyles completely, and there will be little disposition to retract, and, as four muscles are only concerned, little liability to inordinate suppuration, and the ligatures will appear at the most dependent portion of the wound.

In the eighth number of the *Journal Hebdomad: November 1830*, is published the report of M. Larrey on behalf of the committee of the Academy, on M. Velpeau's memoir, and also critical and explanatory remarks of M. Velpeau on the report. We can only observe that the committee conclude, that in recent injuries, the disarticulation at the time is not to be preferred to the amputation through the head of the tibia where this is practicable, and where this cannot be resorted to, it is also not preferable to amputation of the thigh. But in chronic cases of disease, such as necrosis, gangrene, &c. amputation at the knee may be more advantageous.

M. Velpeau contends, however, that the operation at the knee is more easy, simple and less dangerous; and also that the stump will be more useful and convenient, and the deformity be more easily rectified by artificial means.

35. Radical Cure of Hernia.—In our last number p. 248, we presented our readers with a plan for a radical cure of hernia suggested by M. Belmas, and confirmed by many successful experiments on animals, and by one on the human subject. At the meeting of the Royal Academy of Paris on the 20th of December 1830 (*Journal Hebdomadaire* No. XIV), M. Breschet presented a report on two memoirs of M. Ravin on the same subject, in which a perfectly safe and simple mode is proposed, and which, M. Ravin declares, has actually succeeded in eight cases. The author believes that if no mechanical obstacle be opposed, the aponeurotic tissues will always slowly coalesce (*revenir sur eux-mêmes*), and obliterate the openings between their fibres. He hence proposes to keep the intestine as long as possible at a distance from the ring, and for this purpose, keeps the patient on his back with the pelvis more elevated than the rest of the trunk, and the affected side more than the sound, while astringent lotions, &c. are applied to the groin.

36. Excision of the Elbow Joint.—Mr Syme continues his Quarterly Reports of the Edinburgh Surgical Hospital, in the *Edinburgh Journal*; in the number for October last, we have the report ending the 8th of August 1830. He still recommends the practice of excision as being often preferable to amputation, and states that in ten cases he has lost but one patient. This was a man whose general health was undermined, and whose elbow joint was in a diseased and carious condition, with fistulous openings, &c. The operation was nevertheless performed on the 25th of June, and the patient somewhat improved. On the 15th of July, a large abscess appeared on his hip, which opened and proved to be an extensive lumbar abscess. On the 31st of July he died from the effects of the combined irritation.

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since operated successfully on David Forret, aged twenty-eight, who had been ill with a diseased elbow for nine months. He also reports a former patient, Elizabeth Falkirk, whose elbow joint he had operated on in the summer of 1829, and who had returned home and remained well, using her arm for all ordinary purposes, until December last, had a diseased wrist of the same arm. Amputation above the elbow was performed, and the patient recovered. The elbow being dissected, the specimen of the union which is established in such cases. When the ligaments and muscles were dissected, the appearance greatly resembled a false joint, owing to a large mass of fibrous ligamentous looking substances which connected the bones together. This connecting medium, which was about an inch in length, and perfectly flexible, resembled the structure that is usually found in false joints.

37. Diseases of the Joints.—Mr Syme has followed the advice of Larrey and of the French surgeons generally, in employing the actual cautery as a counter-irritant in many diseases of the joints. He relates several cases of inflammation of the various tissues of the hip-bone and elbow-joints, in which it seemed peculiarly efficacious.

38. Excision of the Elbow-joint.—The Edinburgh Medical and Surgical Journal for January 1831, Dr James Syme relates a case in which he successfully extirpated the elbow-joint, for a disease of the bones, &c. His patient, Mrs Rodgers, was forty-six years of age, and in November fistulous sinuses existed, and the general health was seriously impaired. The operation was performed on the 25th of November 1829; the greater part of the wound healed by the first intention, and in three weeks she could move her fingers without any pain, which she had not done for nine months before. By the end of December the wound was entirely whole, and she was walking about and moving slightly the joint without any pain. Her general health became much improved, and a succession of abscesses formed in the sore arm for nearly three months. At the end of March she improved in every respect, and has since continued very well. She can bring her hand to her mouth, and is daily in the habit of using her arm in all domestic duties. The strength of the arm continues to improve. The connection of the radius to the humerus does not appear so firm as that of the ulna. October 30th, 1830.

39. Ligature successfully applied to the Subclavian Artery, by Valentine Mott, M.D. of New York.—The following case was reported in the American Journal of Medical Sciences, for February 1831, at page 309.

"William Hines, aged twenty-eight, of Smithville, Virginia, came to New York, August 24th, 1830, and became my patient.

"The account he gave of his case was, 'that about seven weeks ago he received a violent strain while carrying a canoe on hand-bars across the arms, which was followed by an extensive discoloration of the skin of the right arm, extending to the chest, and attended with considerable pain. It, however, yielded to the usual remedies in such cases. Three weeks subsequent to the accident he observed a swelling about the size of a pigeon's egg under the right arm, which had rapidly increased.'

"On examination, I found a tumour about the size of a goose egg, and decidedly an aneurism of the axillary artery. His general health being good, I directed him to keep quiet, to be bled, and to take some purgative medicines; and fixed on Monday, the 30th, for tying the subclavian artery.

"At 11 o'clock, A.M. he was placed upon the table, with the shoulders elevated and inclined to the right side. An oblique incision was made, two inches in length, through the integuments and platysma-myoides muscle, and corresponding to a middle line of the triangular interval formed on the inner side by the scalenus muscle, on the outer by the omo-hyoideus, and below by the cla-

vicle. The cervical fascia was next divided to the extent of an inch, and with the forefinger and the handle of a knife, the adipose and cellular tissues were put aside, and the artery readily exposed as it passes from between the scaleni muscles. After denuding the artery a little of the filamentous tissue with a knife rounded at the point and cutting only at the extremity, a ligature was conveyed around it, from below upward, by the *American needle*, and the artery tied a little without the scalenic muscles.

"No other ligature was required. The patient lost less than two tea-spoonfuls of blood. The operation lasted about fifteen minutes, and was performed, with the assistance of Drs Vache and Hosack, in the presence of Drs Barrow, Kissam, Rogers, and Wilkés. The wound was closed by two stitches and adhesive straps; the arm was immediately wrapped in cotton wadding; no diminution of temperature took place.

"8 P.M. Found the patient comfortable; says he has less pain in the arm than before the operation; heat rather more than natural; a faint pulsation in the right radial artery; pulse 88.

"31st, Morning. Passed a comfortable night after taking fifteen drops of the sol. sulph. morphine, which was given to allay the pain about the elbow, and which he considered rheumatic, having had more or less of it for some time previous to the operation. This pain was no doubt caused by the pressure of the tumour upon the brachial plexus. Pulse 70; skin natural; says that he feels very comfortable.—Evening. Complaints of headach; directed a saline cathartic; pulse 90; skin pleasantly moist; pulsation in the right radial artery occasionally very distinct and regular; temperature of the right arm a little higher than that of the left.

"September 1st. Pain of the arm obliged him to sit up most of the night in an easy chair—after the operation of the salts, took again fifteen drops of the morphine, and slept quietly about five hours. Feels at present very comfortable; pulse 75; not the least evidence of febrile disturbance in any of his symptoms.

"2d. Feels much more comfortable than yesterday; slept composedly all night; little or no pain in the arm; pulse 80; removed the wadding from the arm, and enveloped it in flannel, which keeps it very comfortable.

"3d. Slept well all night after taking his dose of morphine, and feels very well to day; pulse 74; pulsation of the right radial more regular and distinct.

"4th and 5th. Continues to improve.

"6th and 7th. Every way comfortable; right radial pulsates regularly, though more feeble than the left.

"9th. Dressed the wound and removed the stitches; mostly healed, except where the ligature from the artery passes out. Pain in the arm for some days past has not been felt; makes no complaint; pulse in the radial artery very distinct and regular with the actions of the heart.

"11th. Dressed the wound, which looks remarkably well; every thing appears very favourable.

"14th. On removing the dressings to day, the ligature came away; all promises well.

"20th. Wound being just closed, permitted him to walk about the room, and to take his usual allowance of food; aneurismal tumour much diminished in size, and very hard.

"27th. Left the city to day on his return by water to Virginia.

"When I reflect on the disease for which this operation was performed, and upon the situation, importance and size of the vessel which was tied for its removal; it appears to me almost incredible that but twenty-seven days should have been required for its cure. That it should have succeeded is particularly grateful to my feelings, inasmuch as it was first successfully performed by an American surgeon, and is an additional proof of the triumph of surgery over disease and death."

* Dr Post, of New York.

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40. Longitudinal Section of the Lower Jaw.—Amputation of the lower jaw has now been frequently and successfully performed: but even when most successful, much deformity and inconvenience remain. To obviate this, Dr J. Rhen Barton of this city, so well known for his ingenuity and dexterity in devising and executing surgical operations, has successfully adopted in one case another mode of operating, which no doubt may frequently be imitated with great advantage. We shall give the details of the case from the Amer. Journ. of Med. Sciences for Feb. 1831.

"On the 29th of July, 1830, Isaac Duffield, a mulatto man, thirty years of age, from the State of Delaware, was admitted into the Pennsylvania Hospital, with a disease said to have originated in the gum which had been injured by the pressure of the fulcrum of the key, used in the extraction of a molar tooth of the left side of the lower jaw, eighteen months previously.

"It assumed the form of a tumour, involving the gums, alveolar processes, and part of the body of the bone, and gradually increased in size until it had taken entire possession of the mouth, forcing the tongue into the pharynx, and stretching the jaws widely apart. A large portion of the tumour also made room for itself by escaping from the cavity of the mouth, and rising upon the outside of the superior maxillary bone, thus producing great deformity by protruding the lips and left side of the face and neck. Where this loathsome mass presented itself at the mouth it was in a state of ulceration.

"The tumour was of a florid red colour. It was dense, elastic; and lobulated, and in its structure partaking much of the character of the gums. From its surface was secreted large quantities of muco-purulent matter.

"Upon introducing a spatula into the mouth, and putting the right cheek upon the stretch, the patient could force the tip of the tongue into view between the half arches and the side of the tumour.

"As he had neither room for solid food, nor power to masticate it, his nutriment was taken in fluid form by a similar process of distending the cheek.

"*Epulis* is the name assigned by writers to this species of tumour, which, though not malignant in its early stage, nor essentially so at any period, is said frequently to eventuate in a cancerous disease.

"The peculiarity of the operation I am about to describe consists in the longitudinal section of the bone, by which a rim at the basis of the bone was preserved to support the under lip and chin, thereby obviating the distortion of the face consequent to the usual mode of cutting out an entire piece of the bone by the perpendicular section.

"*Operation.* On the 4th of September, an incision was commenced over the left angle of the lower jaw, carried on a line with the under edge of the base, around to near the facial artery of the opposite side. This incision extended through the integuments and muscles of the cheek and lip, so as to open the cavity of the mouth. The under lip, towards the left commissure of the mouth, was cut through to meet the first incision at a right angle. The tumour was thus brought into view, exposing fully its connexion with the lower jaw, to the anterior and posterior surfaces of which it firmly adhered. The adhesions were detached from the anterior surface of the bone, as high from the base as it was sound. A section was then made with a saw, through the body of the bone, just below the maxillary canal, in a line parallel to the base of the jaw, and extended as far back as the roots of the last molar tooth, on the left side, and to the last but one on the right side. A perpendicular section was then made with a narrow bladed saw, between the teeth through the alveolar process, until it met at right angles the first division of the bone. The portion thus insulated contained the diseased mass. The tumour was then elevated, and its connexions with the inner surface of the bone separated. It now came away entire, exposing the body of the bone in a healthy state, except at one point on the surface, which was readily taken off with the nippers.

"No blood-vessels were taken up but the left facial and right coronary arteries; the hæmorrhagy from other points ceasing spontaneously. The flap was now

replaced, and the sides of the incision carefully adjusted; the lip closed with the hare-lip pins, and the rest supported by interrupted sutures and adhesive plaster.

"The patient did well; the wound united by the first intention, and in a short time the parts within the mouth healed over the bone. The tongue regained its natural position. The distended and flaccid lips and cheek gradually contracted to their natural dimensions, but their collapse was prevented by the rim of the jaw which had been left. The contour of the face was thus preserved, and the patient recovered the power of masticating his food with the three remaining teeth, and their antagonists of the upper jaw.

"On the 9th of October following, the man was discharged from the Hospital cured, and almost incredibly free from deformity."

41. *Varix*.—Mr Liston, in his late book on the elements of Surgery, says the Edinburgh Medical and Surgical Journal, page 200, for January 1831, is decidedly partial to the method of Mr Mayo in the treatment of varix, by inducing the adhesive inflammation by means of the caustic potass. He allows, however, that the practice is not free from danger, either from ulceration of the venous coats, and alarming hemorrhage, or from excessive spreading phlebitis. He recommends, therefore, that the caustic be always applied to the venous trunk at a healthy point.

42. *Dressing of Wounds*.—Mr Liston has in a great measure abandoned sutures, and also the resinous plasters, in dressing recent wounds. He uses instead of the resinous plaster, slips of glazed ribbon, immersed in a saturated solution of isinglas in brandy, which he represents as much less irritating and more tenacious than the common adhesive plaster. Sutures are employed to fix and retain the parts temporarily in opposition, and the ribbons are not applied till the adhesive substance has partly coagulated and the oozing of blood has ceased. After the application of the ribbon slips the sutures are removed.

43. *Ununited Fracture*.—We copy verbatim the following case from the New York Medical Journal for February 1831, as exhibiting one of the rare instances of recovery after the operation of excision of the ends of the fragments in an ununited fracture, even when the operation was not performed in the most delicate manner; a criticism very seldom applicable to the New York surgeon, whose celebrity as an operator is so well established.

"James Norton, a middle aged man, of good constitution, admitted April 5th, 1830. Ununited fracture of the os brachii. It was broken in the middle of January. Splints were applied until the time of his admission. About the 10th of April, Dr Mott passed a seton between the fractured ends, and Kent's apparatus for fractures of the arm was applied, by means of which the arm was kept at rest in a flexed position. Sept. 28th. No union having taken place, Dr Mott withdrew the seton a few days ago. To-day he made an incision on the external part of the arm down to the upper portion of the bone, the extremity of which he detached from the surrounding parts; he then passed a chain saw under it and sawed it off. The lower portion of the bone, which lay on the inside, was then laid bare with considerable difficulty, owing to its depth and to the vicinity of important parts, and the chain saw was passed under it; but in attempting to saw it off, the saw was broken. The extremity of the bone was then partly sawed off by means of a rotatory saw, and of Hey's saw, and partly broken off with bone nippers. It was then raised up, and sawed smoothly off with a metacarpal saw. The whole length of the bone removed was more than two inches. The extremities of the bone were then perforated with a drill, and united by means of well-annealed iron wire, the ends of which were passed through a double canula, and secured without. The edges of the wound were brought together with sutures and adhesive straps, and Kent's apparatus again applied. Two or three weeks after the operation, the wire came away, the arm became gradually stronger, and on the 15th of December, when he was dis-

charged, the union was complete. He had not yet, however, regained the full use of his arm, as the muscles were very much relaxed by the shortening of the limb."

44. *Lithotripsy*.—This operation we have frequently alluded to in our preceding numbers, and have expressed favourable opinions respecting it, when judiciously recommended, and skilfully performed, by an experienced operator. Few cases are on record of its successful employment, excepting among those who have devoted most of their time and labour to this subject exclusively. The following case, from the *New York Medical Journal* for February, in which lithotripsy was successfully performed by Dr L. Depoyre, adds to the list of exceptions, and constitutes, as far as we know, the first effectual attempt in this country. We shall therefore give the details.

"Mr B., aged sixty-one years, of a lymphatic sanguine complexion, remarkably corpulent, consulted me some time in the Month of October 1830. The patient had many symptoms which led him to suspect the existence of a stone in the bladder; the most convincing proof with him was, that for many years previously he had frequently passed many urinary calculi. Some of these had been sufficiently large to remain some days in the urethra, but he managed to disengage them without having recourse to surgical aid. Within a few months he had observed, that while passing his urine, the jet would be suddenly interrupted. The bladder certainly contained more urine, for the desire to pass more still continued. It was evident to me that there existed a calculus in the bladder, and a silver sound, which I introduced immediately, justified the prognosis.

"The patient, more anxious for the future than actually suffering from the disease, was naturally desirous of being released from his complaint. Lithotomy was not to be had recourse to, as the patient declared he would rather die than submit to that operation.

"I proposed lithotripsy, and it was readily acceded to. In order to perform this operation, I could only obtain an instrument with a handle (*lithotriteur à manivelle*), which is very imperfect and feeble in its operation; but as the calculus was probably of no great size, I supposed that this instrument would suffice.

"The bladder having been previously injected with tepid water, I introduced the instrument, and soon seized the calculus, the size of which I estimated to be about fourteen lines in its greatest diameter. As soon as the drill touched it, it appeared to be hard, and gave out a sound sharp enough to be heard distinctly by the patient himself, and by those who were present during the operation. As I soon discovered that the drill acted very slowly upon the stone, I suspended the operation, and resumed it a few days afterwards, with a new drill, which, however, did not wear away the calculus much faster than the first. After each of these operations, I was encouraged by observing that the patient passed considerable quantities of fragments of stone."

"The incomplete success of these two attempts induced me to cause to be made an apparatus like that of M. Civiale, and on the 29th of November I again introduced the instrument.

"The calculus was seized two different times, and was perforated through its whole substance on both occasions with a drill, three lines in diameter. The operation lasted fifteen minutes, and did not occasion the least pain. Upon withdrawing the instrument, the patient passed with his urine a whitish powder, mixed with fragments of different sizes, among which I noticed one about the size of a pea. The patient felt, during the remainder of the day, some inconvenience from being frequently compelled to pass his water, and each time it was accompanied with small fragments of the calculus. Emollient enemias and muclaginous drinks so rapidly subdued this irritation, that the patient wished the operation to be repeated a few days afterwards. As a matter of precaution, I did not, however, resume it until the 8th of December.

"On this occasion I experienced much difficulty in endeavouring to seize the

calculus. It escaped twice just as I was about to make it secure. I finally succeeded in seizing it, and from the extent of the dilatation of the arms of the instrument, I was satisfied that I had it in an entirely new position. By cautious management, I was enabled to drill it throughout in three different places, and when I had finished the last drill, the dilatation of the arms of my instrument indicated a diameter of five lines. The whole time consumed in this operation lasted forty minutes. As in the preceding essays, the patient was merely fatigued from his position, and experienced no pain. When the instrument was withdrawn, he passed his urine, with an abundant discharge of fragments, some of which were as large as those which I have already noticed.

"During this operation I collected but a small quantity of the debris of the calculus, and only some of the larger fragments, and notwithstanding the gradual diminution of the arms of the instrument, I thought that fragments of the stone might still remain. The symptoms of the disease had never been violent, the desire to pass water continued, and although the urine flowed with an uninterrupted stream, yet my impressions were strong that the stone had not entirely disappeared. To ascertain this, I made three explorations in the course of fifteen days, with the arms of the instrument widely extended, and continued my researches with the greatest minuteness, without finding the least trace of any foreign body whatever. In the course of a few days I had the satisfaction of seeing the health of my patient perfectly restored; and he assures me that he feels nothing of his former disease."

VII. MIDWIFERY.

45. *Prolapsus uteri*.—With the following very interesting cases, we have been favoured by Dr John Warrington of this city.

The great influence which the uterus exercises upon the female economy—the secret but powerful effect which certain derangements of its functions induce in parts of the system apparently remote, the extreme suffering which some displacements of this organ produce—sometimes suddenly and at other times gradually—the fineness of feeling which causes the patient to shrink from revealing her situation (if indeed she be aware of what it really is, which I believe is frequently not the case), even to him whom she believes to be the minister of health—should induce the practitioner to make himself acquainted with the various conditions and derangements of this central organism of the female, which are so destructive of her comfort.

There are strong reasons for believing that from derangements of locality derangements of function frequently ensue; to the former, the aged and the youthful, the married and the virgin female, are subject from various causes, and in different degrees. These, though produced suddenly or more slowly, are susceptible of much, and, in many instances, of entire relief, by the careful attention of the practitioner to the nature of the case, and the skilful adaptation of such means as circumstances shall indicate.

From my note book I have collected the following cases, which are given in considerable detail, to show how various may be the symptoms arising from such conditions of this important organ.

1829, 9th Mo.—I was requested to visit S. H. in haste, with information from the messenger that "she had an attack of gout in the hip." She was of a large muscular frame, latterly her health not good,—upon returning from a ride in the suburbs of the city, she stepped quickly out of the carriage on the pavement, and felt something suddenly give way at the lower part of the abdomen, and when she arrived in her chamber the distress became very severe; she felt a great bearing down, an unceasing desire to pass her urine, a drawing from the umbilicus which caused her to flex herself as much as possible, and apply warm moist cloths under an impression that it was an attack of colic. An acute pain was also felt

over the left hip bone, from the ramus of the pubis to a little posterior to the antitubum. The stomach sympathized with the affected part, violent retchings ensued,—she was very restless,—her skin was covered with a profuse perspiration, while it was cold to the touch; pressure on the umbilical region afforded no relief, neither was the pain in the hip increased by pressure; there was no acceleration of the pulse.

I was led to suspect that there was a displacement of the uterus, and I suggested the propriety of an examination to ascertain the fact. The patient being placed in a suitable position, the os uteri was felt to be within an inch and a half of the os externum. I carefully replaced the organ in its natural situation, and directed the patient to remain in bed with the hips a little elevated. An anodyne enema to be administered, as several doses of laudanum given by the mouth had been rejected during the violence of the pain. Next day was passed comfortably; slight febrile reaction had taken place; this was removed by a gentle laxative; on the third day she was permitted to rise and walk a little; no unpleasant symptom occurring, she in a short time resumed her former habits of activity, and has continued well.

1829, 11th Mo.—E. W. aged thirty-two. A stout woman, accustomed to active exercise in housewifery, was seized with violent vomiting, and soon after with discharges of blood, reported by the patient to be from the bowels. By the use of anodynes and mucilaginous drinks these were soon checked, and she was treated for a time as suffering from wandering rheumatism; without, however, any permanent relief, and she at length assented to her friends' directing my attention to the most prominent seat of distress. She then stated that she suffered much pain in the region of the uterus; when she arose and stood erect, she felt as though something would fall away from her, and that she sometimes could not retain her urine, and at others could not evacuate it without some pain and much difficulty. A strange sensation was also felt down the thighs; she has also at times experienced a painful tumefaction of the left breast, which I had considered to be symptomatic of some morbid condition of the genital organs. She has been engaged in hard service, and about six months previously, whilst lifting a heavy weight, felt something suddenly give way in the hypogastric region, and a sensation of something escaping from the vagina. By a little rest, this was soon relieved. In her efforts at vomiting the same symptoms recurred, and have been her worst complaint since. This statement led to the conclusion that the uterus was dislocated; she reluctantly consented to an examination per vaginam. The os tincæ could not be felt; behind the neck of the bladder above the pubes, was a tumour of firm texture, laying nearly at right angles with the superior strait, and extending backward against the rectum. My impressions then were that the uterus was in a state of retroversion; that the pressure of the os tincæ upon the neck of the bladder kept up the constant disposition to expel the urine, and acted at the same time as the obstructing cause to this evacuation. The catheter was introduced with considerable difficulty and with much pain to the patient; a large quantity of urine was drawn off. Opium was administered to procure rest through the night; the same difficulty recurring next day, a warm semicupium was directed to be used whenever the bladder became distended; this had a slightly temporizing effect. In three days the examination of the condition of the parts was repeated; first in the erect position, to ascertain the effect of gravity upon the tumour; in doing this, a resistance was offered to the finger soon after its extremity had passed between the labia; the same condition of parts presented as before. When placed in the horizontal posture, the tumour receded from pressure. The patient was now directed to go upon the breast and knees (the urine having been drawn off with a catheter), the hand was introduced in a wedge-shape into the vagina, and pressure made upon the fundus of the uterus, carrying it backward and upwards, till it receded beyond the reach of the fingers. The patient immediately expressed herself considerably relieved. To correct the fetid, and, at times, copious discharge, as well as to relieve the soreness of which she frequently complained, she was directed to use a watery solution of opium with sulphate of zinc several times a day as an injection

into the vagina. Under this treatment she improved rapidly for about a week, when by violent and imprudent exertion, the whole mischief was renewed, and somewhat aggravated. Then followed frequent, quick, and small pulse; great pain and extreme tenderness in the abdomen; difficult urination, attended with great heat; short, hurried, and laborious respiration. Eighty leeches were applied over the abdomen. The camphorated tincture of opium and sweet spirits of nitre were given in small and frequently repeated doses till the system was composed. Next day she felt better whilst remaining in bed, but, upon rising, felt a return of the pain, and had a discharge of purulent matter from the vagina. Directed her to wash the parts with soap and water, and have the bowels opened by an enema. Having procured a pessary of French manufacture under the name of gum elastic, I placed it under the uterus to support it. This procured her so much relief, that she again used great exertion; in two days she felt a return of pain, and when making an effort to evacuate the bowels, carried the instrument so far forward as to obstruct the urinary discharge. This was relieved by the catheter and the replacement of the instrument; after which, by means of strongly astringent injections, it was retained. About three weeks after, in consequence of a fetid discharge from the vagina, I removed the pessary; the abdomen is yet tender, and cannot easily bear pressure, but so much relief has it afforded her, that she is unwilling to dispense with its use. After cleansing it, I returned it to its place. In about a week subsequently I found her at her wash-tub, obviously improved in health, and quite able to partake of active exercise.

I have found it necessary to remove the instrument from its situation once in two or three weeks to have it well washed; the discharge becomes very offensive, and erodes the coating of the instrument, the roughened surfaces of which cause great irritation. The circumstances of the patient requiring public aid, she went into the alms-house during the winter. Whilst there another pessary of the same kind was used, the surface of which became quickly so much eroded as to require it to be removed, soon after which she relapsed into her former state of suffering. In the fourth month following, she again came under my care, and I substituted one made of glass, and to correct the fetid discharges which attended this situation of the uterus, I directed her to use a solution of chloride of lime in water. This had a happy effect. Since that time she has been much more comfortable, and during a period of seven months, there has been no occasion to remove the instrument from the vagina, though at one period, after a heavy fall, it became necessary to adjust its position a little. She is now able to perform nearly all the offices of a domestic, with a fidelity which endears her to the family of my friend with whom she lives.

1830, 2d Mo. 5th.—A. P. aged sixteen years, being one day at a distance from home, in descending a stair way, slipped and fell with her whole weight upon the sacrum against the edge of the step. When she arose, she found herself unable to stand erect without severe pain in the pubic region, and in her attempts to walk home, she was obliged to stop to rest, and seek relief by inclining forward so far as to relax the abdominal muscles, at the same time feeling a constant inclination to propel something from the vagina. I was requested to visit her on the 6th. I found her with fever, and complaining only of pain in the head and back. For this she was directed to lose 3x. of blood, and have the bowels opened by sulph. magnes. In the afternoon of next day I found her complaining of pain in the back and hypogastric region. She had attempted to sit in her chair to rest from the fatigue of lying, and from her position and apparent suffering (supporting herself by her elbows upon the arms of the chair), I strongly suspected distended and inflamed hemorrhoids. Upon inquiry respecting the duration of these symptoms, I received the history of the accident, and found there had since been a constant bearing down, with inclination to pass urine and evacuate the bowels; and when standing, a dread of "something falling away from the stomach." I suggested my apprehensions to the mother, and proposed an examination per vaginam, to ascertain if the uterus had not suffered from the fall. This was consented to, and the os tincæ was found nearly in contact with the orifice of the urethra. At the posterior part of the vagina a tumour was felt,

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Introducing the finger into the rectum, proved by its rotundity to be directed to go upon the breast and knees, the reduction of

being directed to go upon the breast and knees, the reduction of the fundus was passed upward and returned to its normal situation. So much was the patient relieved by this operation, that although she was directed to remain quietly in bed, she very soon afterwards walked about the room with entire freedom from pain, and the next day had the satisfaction to find her at her usual avocation. She has, since the operation, been able to walk a distance of several squares daily.

Mo. 17th.—E. M. G. aged thirty-five, widow, with several children. In pregnant with her last, about four years since, fell upon the ice, and suffered much from violent pain in the back. After parturition she became subject to menorrhagia and "great bearing down in the back and navel;" her health gave out, and she became emaciated, with constant fever; the hectic flush made its appearance upon her cheek; I suspected her to be labouring under the effects of a diseased womb; proposed an examination, which was reluctantly consented to, and she "could not believe that was her situation." The uterus was found in the vagina, with its mouth projecting towards the left side of the pelvis. By steady pressure it was passed back as far as the finger would reach. A circular glass pessary was placed under it, and the patient requested to remain in bed a few days till the parts became accustomed to the new tenant. In a short time all the unpleasant symptoms were removed, and the countenance wore a more agreeable aspect. To the back the emplastrum roburans was applied, and to remove constipation she was directed to take the Pil. Rhei occasionally. At my subsequent visits I found her more comfortable. She menstruated soon after, but was again attacked with a distressing leucorrhoea, though to a much less amount than before. For this she was directed to wash the parts with soap and water, and use an injection of sulph. zinc. in the vagina. 8th Mo. 18th. Patient now enjoys good health, and is able to use active exertion.

4th Mo. 1830.—E. M. C. aged about thirty-five, mother of five children. About nine years since, soon after her marriage, she became so delicate as to be unable to walk, having a distressing weight and bearing down in the pubic region. Her pregnancies were attended with much distress, her last one particularly so, and what is remarkable, she has felt little or no amelioration after the period of "quickening." She is at present in the fifth month of gestation, and complains most of the time of pain in the lumbar region, with sometimes a dragging sensation about the umbilicus; for this she was twice cupped, with merely temporary relief. She does not refer to any pain in either side, or numbness in the lower extremities, neither is she much relieved by the horizontal position, but a constant uneasiness is felt in the lower part of the back. To get relief, she throws herself on the bed, then rises unrefreshed; thus, as she states, she spends much of her time. Her habits of life are very regular, and she has no fever.

Strong suspicions arose that she was labouring under some displacement of the uterus. Examination gave proof of a relaxed state of the vagina, and a prolapsus of the womb, which was felt to be quite low. With gentle, but firm pressure, it was restored to its proper place. A glass pessary was introduced, and the patient directed to remain forty-eight hours in bed to give the parts time to accommodate themselves to the instrument. On the third day she resumed the charge of her family, and was found actively employed in her domestic concerns, declaring herself to be greatly relieved. She continued well till one day about three weeks subsequently walking a distance of twenty-two squares, she returned fatigued, with some pain in the back and pubic region; in the evening the pessary was passed by an effort to relieve the bowels, and the pain formerly complained of returned. I was again requested to see her, and finding her very uncomfortable, I again placed the pessary under the uterus. She was immediately relieved. Calling to see her a few days subsequently, I found her closely employed in the duties of her station, quite comfortable. The patient continued to do well throughout the subsequent part of gestation. I removed the pessary about two weeks

previous to her confinement, which occurred on the 21st of 9th Month. Since that time she has not required my attention.

7th Mo. 5th.—E. A. aged fifty-one years. Mother of twelve children, countenance expresses great anxiety and distress; in standing or walking, inclines a little forward, cannot ascend stairs easily, complains of a "burning sensation at the lower part of the stomach," which she attributes to a "bowel complaint," with which she is often, indeed almost constantly annoyed, the evacuation of the urine is attended by heat. She is much troubled with piles, and is constantly threatened to have something fall from the vagina when erect. The patient is febrile and emaciated, the pulse is small and frequent, her disposition extremely irritable. I suspected some derangement of the uterine locality. Examination revealed a complete relaxed condition of the vagina, the os uteri just protruding between the labia which were of a spongy texture. The meatus urinarius was very tender to the touch. All these parts were in a highly sensitive condition. Pressure upon the womb caused it to recede and at first gave much pain—by placing the patient in a horizontal posture it was reduced without much difficulty. The hemorrhoidal tumours were large and very painful under the slightest pressure. The patient was directed to remain in bed, keep the parts clean by frequent ablutions with fine soap and water, and to use three or four times a day an injection of the following preparation.

R. galle allep. contus. one dr. infuse two hours in a pint of boiling water, strain and add sulph. zinc, one dr. This powerfully constricted the relaxed external parts, removed the prolapsed state of the vagina, which the patient informed me had been so considerable at times as to present itself beyond the labia, and to support it she had at times worn bandages, which increased the inconvenience by causing excoriation. She was now considered in a fit state for the pessary—the pressure made upon the neck of the bladder in passing it gave much pain, but when placed in its proper position, the patient was insensible of its presence.

Rest and the horizontal posture with the frequent use of the astringent injection were strictly attended to, for a few days. She then rose and walked with a facility which surprised her; she has urinated freely since and has none of that tenesmus which had heretofore distressed her very much. A laxative diet, with a little oleum ricini occasionally, have been necessary to keep the bowels open, and the hemorrhoids have been relieved by the application of Goulard's cerate.

7 Mo. 23d.—Walked 17 squares to report to me her entire relief from her former suffering,—can now walk with ease on a level surface, though she finds some difficulty in ascending stairs—her appetite is good and her health is much improved. To this condition of the uterus she had been subject during the last eleven years—and attributes it to a strangury caused by a large blister which had been placed over the abdomen a few days after the birth of her tenth child, and says her last pregnancy was more severe than those which had preceded it.

8 Mo. 23d.—I was requested to visit E. H. aged thirty-six; mother of several children, of active habits and usually enjoying good health; about nine months since, she felt an uneasy sensation in the pelvic region and a difficulty in passing urine. After an intermission of a few weeks, these symptoms returned with greater violence with weariness in the loins, a dull pain in the groins, and a burning pain in urinating. She became feeble, lost her appetite and applied to her physician for advice. By him she was directed to remain in the horizontal position, keep the bowels open by saline laxatives, and restrict herself to a vegetable diet, be bled from the arm and leeches upon the hypogastrium occasionally—all these directions except the last she had complied with, and had remained in bed about six weeks without any improvement.

When I saw her, she could not stand or walk without pain, and found it almost impracticable to ascend or descend stairs. There was no pain felt in either side; there was a sense of a weight depending from the umbilicus, and the whole abdominal viscera appeared almost to have subsided within the cavity of the pelvis. Examination per vaginam demonstrated a prolapsus of the uterus with enlargement of its mouth and neck, these were low in the pelvis, but directed backward into the posterior extremity of the vagina—the parts were restored to their proper

position, and a circular glass pessary was placed under them.—After using an astringent injection of a solution of sulphate of zinc and opium, she was able to walk with ease. Could ascend and descend stairs readily.

The above cases have not been presented to the reader in consequence of their rare occurrence, but to show that they are of greater frequency and of rather more importance than practitioners generally suppose. If hernia, with its occasionally terrific consequences, so much dreaded by the suffering it causes in our own sex, has interested the attention of men of the highest eminence in our profession, should not also the displacements, to which the uterus, from its peculiar situation and mode of attachment to the surrounding parts, is even more liable? Though perhaps less sensible and less intimately associated with the vitality of the system, than the tender bowels, yet the extreme suffering which sometimes attends the deranged condition of this organ, the languishing load felt at the back, the distress about the hypogastrium, the great deprivation which many females, particularly mothers feel, in being unable to use much exercise on foot, and the large, fetid, debilitating and frequently excoherating discharge from the parts concerned—are circumstances which demand, notwithstanding the passiveness with which the patient endures the malady, that it should be studied, and that where our skill can be interposed we should afford relief.

The reluctance on the part of the patient to reveal her situation often prevents the interposition of relief till extreme pain, or debility or some other distressing consequences have taken place. Indeed it is sometimes the case, that she is ignorant of the causes which induce these symptoms, uneasiness being frequently felt in a remote part, while the real situation of the disease is unsuspected.

Sudden though partial prolapsus appears to be productive of more suffering than one slowly though extensively formed. I lately had occasion to attend two females, who, from great exertion in lifting, were attacked with pain in the lower part of the abdomen and loins, frequent efforts to urinate, &c. in both of whom the restoration of the uterus to its proper situation caused immediate relief, and after confinement to the bed a few days, they have continued well—while another patient, of whom I have charge, has for more than five years past, been so subject to an entire procidentia uteri, that its surface is nearly like the skin of the abdomen itself, yet, notwithstanding she has had to perform active and laborious exercise, now in the 58d year of her age, and had felt it merely a slight addition to the infirmity of increased years, till during the extremely warm weather of last summer, when her health failed very much and she was obliged to solicit advice.

The whole uterus, somewhat enlarged was found depending at the os externum. It was returned with little difficulty as the perineum had been extensively lacerated during a badly conducted parturition about twenty-four years previously. A very large pessary was introduced which supported it partially and affords much relief and she is again recruiting. Whether this comparative exemption from pain results from the fact, that at this time of life the uterus has ceased all its functions as a gland, I am not fully prepared to say, though I suspect this has some influence over its sensibility. Certain it is, that during the menstrual periods of the female whose uterus is displaced, her sufferings are mostly increased, the flux is irregular and the intervals are frequently filled up by a distressing leucorrhoea.

The treatment of these cases varies according to circumstances, but where there has been much pain and constipation I have had the bowels kept open by small and frequent doses of rhubarb and extract of henbane—this usually agrees well with the patients as a laxative in the following proportions

R. Pulv: Rhei 1 dr.
Ext. Hyosciam. 1 sc.
M. ft. Pil. xx.

One of these to be given every one, three, or six hours pro re nata.

In many cases local depletion is necessary, by cups or leeches to the sacrum or pubic region, in a few instances I have directed blisters to the sacrum, but in all these cases there were symptoms of local inflammation.

Occasionally I have had astringent injections used as a preliminary to the use of the pessary, but have frequently at once introduced this instrument. After some trial with those made of cork covered with wax, and those of the French manufacture resembling the gum elastic and finding them liable to several objections, I have had them made of glass, which I think will be found to possess the following advantages: 1st. No fluid secreted by the uterus or vagina can destroy the material.

2dly. The perfect smoothness of the surface, to which none of the secretions can firmly adhere—a few syringes full of tepid soap and water being quite sufficient to keep them clean without removing them from the vagina.

3dly. The little irritation they produce in the vagina, many patients not being sensible of their presence in that situation.

My friend William Scattergood, to whom the suggestion was made, has with much care succeeded in getting the article neatly manufactured, and from his shop at the south-west corner of Second and Green streets they can be obtained of various sizes.

46. *Stethoscopic signs of Pregnancy.*—In the Dublin Medical Transactions, Dr Ferguson has published an account of his success in detecting pregnancy by means of the stethoscope. He says he has never in a single instance been mistaken; and in one instance only of undoubted pregnancy, was unable to detect the stethoscopic signs. Two distinct sounds may be detected; one arising from the pulsations of the foetal heart; the second from the placenta, resembling a feeble thrill, which Dr F. refers to the passage of blood in the arteries connecting the placenta to the uterus. The placental noise may generally be found in one of the iliac regions, and in the same subject is always to be found in the same place. It may be mistaken for the pulsations of the iliac arteries, but this last will be heard perhaps in all cases on both sides, and can only be perceived in the groin, while the noise produced by the placenta is heard over some space, perhaps three or four inches square. The foetal heart may often be heard in every region of the abdomen. Although it and the placenta are sometimes heard on the same side, and even in the same spot, yet usually they are on opposite sides; the foetal heart is generally perceived in one of the iliac regions, but unlike the placenta, it is not always heard in the same place, in the same individual, but it does not vary much from the point where first heard. Its double beat is well marked; and the frequency of its pulsations is, says Dr F., always much greater, often double that of the mother's.

In the Dublin Hospital Reports, this subject is also treated of by Mr Kennedy, who agrees with Dr Ferguson that the placental thrill is owing to the transmission of blood from the arteries of the mother to the placenta. He appears, however, to consider this thrill as important in detecting pregnancy in its early stages before quickening, and before the pulsation of the heart can be recognized. He has noticed the placental thrill as early as the 10th week, and hence in many cases this diagnostic mark of pregnancy becomes extremely valuable,—cases to which particular reference is unnecessary.

VIII. CHEMISTRY.

47. *Analysis of the Pulmonary Perspiration.*—M. Collard de Martigny gives the following as its composition.

Water	907
Carbonic acid	90
Animal matter	3
	1000

M. Collard could detect no ammonia. Now if Lavoisier's idea were correct that for the production of the moisture, the hydrogen of the venous blood under-

gase a true combustion in the lungs, it must be assumed to be nascent hydrogen; but it has been proved, that wherever nascent hydrogen is in contact with nitrogen, as it would be, in this case, in the lungs, ammonia is formed. Therefore on Lavoisier's theory we ought to find this alkali; and as we do not find it, M. Collard thinks the view of Lavoisier falls to the ground.—*Journ. de Chim. Méd.* No. xxiii. Dec. 1830.

48. *Effects of the Respiration of different Gases.*—In our number for July last, vol. x, p. 217, we gave a note on the effects of oxygen when respired, according to the experiments of Mr Broughton. This experimenter tried the effect of a number of other gases. Nitrous oxide had precisely the same effect as oxygen, but acted with more rapidity; that is, it acted as a narcotic poison, producing a universal arterIALIZED state of the blood, and exciting symptoms of severe nervous derangement. A kitten was killed in half an hour, sparrows in four or five minutes, mice in about eight minutes; but a rabbit, three weeks old, lived two hours and a quarter. In chlorine all the animals tried were killed in about thirty seconds. The lungs presented the yellow tint and peculiar odour of the gas, so that, contrary to what is usually thought, chlorine passes the epiglottis. Hydrogen proved fatal in half a minute, and immediately after death, the heart and intestines were found to have lost their contractibility; and hence Mr B. infers that it acts as a positive poison. Carburetted hydrogen [oil-gas] acted with rapidity, causing one or two gasps and stupor in a few seconds. The experiments on nitrogen, sulphuretted hydrogen, nitric oxide, and carbonic acid, present no particular novelty.—*Edinburgh Medical and Surgical Journal*, for October 1830.

49. *Mutual Action of Blood and Atmospheric Air.*—In consequence of the recent publication of a paper by Dr Davy, in which he denies the mutual action of atmospheric air and blood recently drawn, Dr Christison of Edinburgh undertook an experimental examination of the point; and his results are given in a paper, contained in the *Edinburgh Medical and Surgical Journal* for January 1831.

The usually received opinion is, that out of the body venous blood absorbs oxygen and gives rise to the formation of carbonic acid. Dr Davy denies this, and asserts, that the carbonic acid, when it appears, arises from incipient putrefaction, which generally takes place in the blood within twenty-four hours, the period during which the contact has been usually allowed to continue. Dr Christison's experiments, however, which appear to have been accurately made, confirm our original opinions on this subject, and seem to prove that Dr Davy's results are inaccurate.

Dr Davy contends that the change, produced by shaking venous blood with air, is more apparent than real, being caused by the bloody froth which is produced, and disappearing when this froth subsides. Dr Christison, on the other hand, has satisfied himself that the change is real and permanent. Dr C. has also found the assertion of Dr Davy inaccurate, that venous blood, when agitated with hydrogen, undergoes the same change as when agitated with atmospheric air.

Dr Christison next takes up the second point,—what are the changes produced on the air. He performed his experiments on venous blood, which was prepared by removing the fibrin without contact with the air. In every case oxygen disappeared, and carbonic acid was formed; but the quantity of the latter was not so great as that of the former; so that in all cases there was a sensible diminution in the gaseous contents of the bottle in which the agitation was made. The diminution is considered by Dr C. to arise from the absorption of carbonic acid by the serum, which fluid has been proved, both by himself and Dr Davy, to have a strong solvent power over carbonic acid.

It might be a question whether the carbonic acid was formed at the expense of the oxygen, or independently of it. Dr Christison considers it proved that it was

formed at the expense of the oxygen; for the amount of oxygen in the residual air, and in the carbonic acid, added to the total absorption, equalled the quantity of oxygen in the original air. It may not be perfectly correct to say with Dr Christison, that this explanation of the source of the carbonic acid is proved, though it is highly probable; for it may be conceived that a portion of oxygen is absorbed exactly equal in bulk to the carbonic acid formed.

Dr Christison is of opinion that the nitrogen remains unaltered in volume. The slight differences which he obtained in his experiments, he very properly attributes to unavoidable errors in analysis.

Dr Christison's view of the subject, from his experiments, is shortly this: air, by agitation with blood, loses oxygen, which is converted into an equal bulk of carbonic acid. Part of this carbonic acid appears as such, but the remainder, by being absorbed by the serum, is condensed, and causes the diminution in the gaseous matter observed in the experiments. As, says Dr C., blood and air out of the body undergo the same changes as in the lungs, therefore, these changes occurring in respiration are a chemical and not a vital process.

According to the probable explanations of Dr C., the amount of the carbonic acid produced, and of the absorption taken together, represents the total amount of oxygen expended. This varied in different experiments from 1.4 cubic inches to 0.57 of a cubic inch, in 10 cubic inches of blood. These differences in the expenditure of oxygen, Dr C. considered to be too considerable to have depended on mere differences in the degree of exposure of the blood to the air, in the act of flowing from a vein; and, therefore, enters into the question as to the probable causes of them. These causes he considers to be two:—1. The difference in the degree of venalization of the blood in passing through the capillaries in different cases; and 2. The difference in the proportion of colouring matter contained in the blood.

The explanation given by Dr C. in support of the reality of these causes are satisfactory. Every physician must have noticed with him the comparative venous state of different specimens of venous blood. Even in the same venesection, the blood which flows first will be often strongly venous, while in the progress of its flowing, it will approach to the arterial state. In some acute diseases, it will have an arterial character from the moment the vein is opened. Dr C. observed this to be the case particularly in acute rheumatism. Now it is plain, that the nearer blood approaches to the arterial character, the less oxygen will be expended to bring it fully to the arterial state.

As it is the colouring matter which is acted on by the air, it is obvious, that Dr C. is right in asserting that differences in its amount will give rise to differences in the quantity of oxygen consumed; and every one will admit that in certain diseases the colouring matter is deficient. Dr C. adduces the instance of the disease of dropsy.—*Edinb. Med. and Surg. Journ.* Jan. 1831.

50. *Osmazome*.—M. Collard de Martigny undertook some experiments to determine whether the principle called by this name is formed wholly or in part by the heat and moisture, by means of which it has heretofore been obtained. To determine this point, he submitted fresh muscular fibre, free from fat, to the action of alcohol in the cold, and obtained a white fatty matter, and a brown matter having all the characters of the osmazome of Thouvenel and Thenard.

M. Collard subsequently fell upon a method of separating osmazome from albumen. If the tincture of iodine be added to a concentrated solution of osmazome, it produces a thick, yellow cloud; if to one of albumen, reddish-yellow flocks. These precipitates are considered to be iodides. If a mixed solution of the two principles, the two precipitates are thrown down together, they may be separated from each other by ammonia, which dissolves the iodide of albumen and leaves the iodide of osmazome untouched.—*Journ. de Chim. Méd.* No. xxiii. Dec. 1830.

51. *New Method for obtaining Iodic Acid*; by M. Serullas.—M. Serullas, having satisfied himself that the perchloride of iodine becomes, by solution in

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ic acid and iodic acid, and recollecting that the former acid is soluble in alcohol, and the latter perfectly insoluble, supposed that these facts might be made use of for obtaining iodic acid quite pure. His conjecture proved to be correct; for by repeatedly acting on moistened perchloride of iodine with alcohol, muriatic acid was removed, and perfectly pure iodic acid left. In order to succeed well in the experiment, the perchloride employed must be carefully freed from subchloride.—*Journ. de Chim. Méd. N^o. XXIII. Dec. 1830.*

52. *New Test for Organic Alkalies.*—M. Serullas proposes as a test for these alkalies in alcoholic solution the use of a weak solution of iodic acid, or a solution of perchloride of iodine, which acts by reason of its containing this acid. It operates on the principle of forming insoluble supersalts with these bases, and its delicacy depends in part upon the large relative quantity in which it combines with each particular base, thus forming of itself nearly the whole of the precipitate. It is particularly sensible as a reagent for quinia and cinchonia, and hence it is that M. S. hopes to be able to apply it to the purpose of ascertaining the true medicinal value of Peruvian barks.—*Journ. de Chim. Méd. N^o. XXIII. Dec. 1830.*

53. *Chloroxalic Acid.*—M. Dumas of Paris gives this name to a new compound, which he obtained by the action of dry chlorine in excess on crystallizable acetic acid, in the sun's rays. One portion of the chlorine combines with part of the hydrogen of the acetic acid, forming muriatic acid, and another portion, with the carbon, oxygen, and the rest of the hydrogen of the acid, forming the new compound.

Chloroxalic acid is solid and crystallizes in rhombs. It is extremely deliquescent. On distillation it yields muriatic and carbonic acids, and a carbonaceous residue is left. It consists of

Chlorine	36	1 atom,
Carbon	12	2 atoms,
Oxygen	24	3 atoms,
Hydrogen	1	1 atom.

This is equivalent to

One atom of chlorine,
One atom of dry oxalic acid, and
One atom of hydrogen.

The above is condensed from an article in the *Journal de Chimie Médicale*, No. XXI, for Nov. 1830. The quantity of oxygen in the compound is erroneously given as an atom and a half instead of three atoms.

MISCELLANEOUS.

AN ESSAY ON THE HISTORY, PREPARATION, AND THERAPEUTIC USES OF IODINE. BY SAMUEL J. HOBSON, M.D. *Member of the Philadelphia Medical Society.* Philadelphia, 1830. 8vo. pp. 60.

The heads of the three sections into which this essay is divided will serve to show its scope and purposes. The first comprises the *history* of iodine, including its *physical* and *chemical properties*, its *combinations*, &c. The second, the *mode of obtaining it* and its *compounds*. The third, its *therapeutic application*, including its *action upon the animal economy*; its *pathological effects*; its *medicinal properties*; its *modus operandi*. We can recommend to our readers this essay of Dr Hobson, which, by the way, obtained the premium offered by the medical society of the state of New York, as giving an account, with the references to the works and authors, of what has been done by physicians with iodine. He does not pretend to any higher merit than that of an industrious compiler. He tells us what others say they have succeeded in performing by the administration of this medicine, and to the large majority of medical readers the information will, we are persuaded, be both new and useful.

A Popular and Impartial estimate of the present value of Vaccination as a security against Small Pox, and of the danger of encouraging or tolerating the inoculation of the latter, addressed to parents and the public. By Samuel Plumbe, M.R.C.S. Senior Surgeon to the Royal Metropolitan Infirmary for Children, &c. London, 1830. 8vo. pp. 99.

To remove the doubts which have been excited in the minds of many parents in consequence of the late extensive prevalence of variolous epidemics, as to the perfect security against the fatal effects of small pox, enjoyed by those who have been subjected to vaccination, and to convince them of the real nature and value of the preservative powers afforded by the latter when successfully performed, are the objects which the author had in view in presenting the present treatise to the public; and we conceive that he has performed his task with very considerable ability. Although to the well informed practitioner the work will present nothing new, it nevertheless contains much useful matter, well adapted to enlighten the public mind on the all important subjects of which it treats, and with which it is essential that every parent should be made acquainted. To the accuracy of the author's statements, and the soundness of his arguments, we can very generally give our cheerful assent.

Medical and Surgical Memoirs, by Nathan Smith, M.D., late Professor of Surgery and of the Theory and Practice of Physic in Yale College. Edited with Addenda, by Nathan R. Smith, M.D., Professor of Surgery in the University of Maryland. Baltimore, 1831. 8vo. pp. 371.

The late Professor Nathan Smith of Connecticut was a man of no ordinary talents. He enjoyed considerable renown in the eastern states, and his opinions

on surgical subjects were held in great esteem in every part of the union. Such being the case, many physicians of this city eagerly put their names to a subscription paper, circulated among them some time ago, for an edition of his works. The volume lately made its appearance, and has been without delay examined; but we are sorry to say, it has sorely disappointed, not only ourselves, but almost every one with whom we have conversed on the subject. We do not mean that the essays by Dr Smith which it contains are inferior in point of value to what we expected, but only that they are far less in number compared with the size of the volume, than what we anticipated they would have been.

Thus, instead of finding the work, which is a goodly octavo of three hundred and seventy-four pages, to contain, as we fondly expected, and as is indeed announced in the preface, the posthumous works of the venerable professor, we discover that all that may be claimed as his consists of an essay on typhus fever, already long before the public, and now reprinted with a few additions and notes by the editor; with four other essays—on Necrosis, on Fracture of the Femur, on Suppression of Hemorrhages, on Amputation; the details of a case of Ovarian Dropsy; of one of Ligature of the External Iliac Artery, and lastly, of a description of a New Instrument for extracting foreign substances from the Oesophagus. The whole of these articles occupy but one hundred and sixty-six pages. The remainder of the volume is made up of twenty-nine pages of a biographical memoir, nearly the whole of which is taken from an eulogium on Professor Smith by his colleague Professor Knight of Yale College, and of one hundred and twenty-seven pages of essays and cases by the editor, in only one or two of which we find a reference to the opinions of his father. If to this it be added, that to the publications of the late Professor Smith, the editor has added notes and supplements amounting to ten or fifteen pages of matter, we shall find that the volume before us consists of about one hundred and fifty pages by the author, for whose work solely we subscribed, and of two hundred and twenty pages by other hands.

Had the intention of resorting to this mode of swelling the volume been candidly stated at the time subscriptions were collected for its publication, some abatement in the eagerness with which many placed their names on the list of purchasers might have been experienced; for however much we all respect the talents and character of Professor Smith of Baltimore, we doubt whether the time has come when proposals for the publication in a volume of his surgical essays would meet with much encouragement. In some twenty years hence, we or our children will, we doubt not, have sufficient cause to think otherwise.

Be this as it may, we must be allowed to remark, that the editor of the work before us has adopted a convenient mode for ensuring the publication of his essays in a form that commands more attention than that afforded by the usual vehicle in this country for articles of the kind—medical journals, and that he could not have bethought himself of a more secure way of occupying an honourable place in the book cases of his medical brethren, and of being handed down to posterity, than by being bound up in company with his respected and talented father.

A Rational Exposition of the Physical Signs of the Diseases of the Lungs and Pleura; illustrating their pathology, and facilitating their diagnosis. By Charles J. B. Williams, M.D. Reprint from the London edition by Carey and Lea, Philadelphia. 8vo. pp. 205.

In this treatise Dr Williams has attempted to explain the mechanism by which the physical signs attendant upon disease of the lungs and pleura are produced, and the manner in which, according to fixed laws, they result as phenomena; to make a knowledge of the pathology of these diseases predicate the signs, and a knowledge of the signs indicate the pathology, "and by thus familiarizing the mind with their principles, to enable it to understand the multifarious forms, which, by combination, these signs may assume, and to judge of the corresponding physical changes that modify or produce them." The work is undoubtedly one of

very great merit, and, however we may differ from the author in regard to some of his views, we recommend it to the attentive perusal of the physician and student: they cannot fail to acquire from it much information in regard to the indications derived from the application of the stethoscope in thoracic diseases and to other important points connected with their accurate diagnosis.

Coloured Drawing of the Great Sympathetic Nerve. By J. P. Manec, D.M.P. Lecturer on Anatomy, &c. at Paris. Copied on stone by P. Ancora, teacher of drawing and painting, Philadelphia. Letter press, translated and corrected by J. Pancoast, M.D.—Of this splendid and very accurate plate, we have already expressed our opinion in a note on page 364, of the present number. It is recommended to the attention of every practitioner and student, to whose offices or rooms it will form at once an ornamental and very important addition.

An Oration delivered before the Philadelphia Medical Society, February 19, 1831. By Thomas Harris, M.D., Honorary Member of the Society, Surgeon of the United States Navy, Member of the American Philosophical Society, Lecturer on Operative Surgery, and one of the Surgeons of the Pennsylvania Hospital. Published by the Society.

The orator has made choice, for the subject of his address, of the influence of exercise in promoting the health and vigour of the human system, and has treated it with great taste and judgment. The oration will be read by every member of the profession with much pleasure, and we are persuaded they will derive from it many useful hints in regard to the effects of exercise upon the digestive, circulatory, nutritive and intellectual functions of the system; the peculiar circumstances under which one or other of the various modes of exercise is to be preferred, and those in which it becomes objectionable. These points are considered by the orator with a degree of distinctness which was scarcely to be expected, considering the narrow limits to which he was necessarily restricted.

The Medical Formulary: Being a collection of prescriptions derived from the writings and practice of the most eminent physicians in America and Europe, to which is added an appendix, containing the usual dietetic preparations, and antidotes for poisons. The whole accompanied with a few brief pharmacæutic and medical observations. By Benjamin Ellis, M.D. Professor of Materia Medica and Pharmacy in the Philadelphia College of Pharmacy. "*Morbos aatem, non eloquentia remediis curari.*"—Cels. De Med. Lib. 1. Third edition, with additions. 8vo. pp. 231. Philadelphia, Carey and Lea.

The medical formulary of Dr Ellis has been for some time before the public, and so far as we have been able to learn, has met with very general approbation. Having examined with much care the present improved edition, we feel much pleasure in being able to recommend it to the attention of the medical profession throughout our country. Comprising a collection of the most approved formulæ for the exhibition of remedies, with occasional remarks in relation to their medicinal properties and the rules for their administration, the medical formulary will form a useful, if not indispensable, addition to the library of every young practitioner. Much useful matter will be found in its pages, which cannot be procured with the same facility from any other source, an acquaintance with which will be calculated to remove much of that embarrassment which every novice in the profession experiences when called upon to decide as to the best forms for the administration of his remedies. An attentive perusal of the formulæ collected by Dr Ellis will, it may be hoped, be in some degree the means of introducing a more correct and classical latinity, and a greater degree of scientific accuracy into the extemporaneous prescriptions of the physicians of this country than has heretofore been the case.

We regret, however, that more attention had not been paid to the typographical execution of the work, so as to have dispensed with the long list of errata which is appended to it. By the ordinary reader, very seldom any attention is paid to the correction of these previously to, or during the perusal of a work;—in two or three instances the errors are of some importance.

EUROPEAN POPULATION.

At a recent meeting of the Royal Academy of Medicine, at Paris, M. Moreau de Jonnés read a memoir, entitled "a statistical sketch of the division of the populations of Europe into different series according to the ages of the individuals who compose them." In this memoir the author examines successively the relation which each series of ages bears to the entire population of each country. From various observations he has found that, in reference to its population, Ireland is the country in which there exists the greatest number of infants or individuals under twenty years of age, they being as 1 is to 2, or composing one-half of the population, while in France they are only in the proportion of 1 to 3, and in Paris, especially, only as 1 to 4. Children under five years of age bear in Ireland a proportion to the population of 1 to 5; in London, of 1 to 7; in Paris, of 1 to 14; and in all France of 1 to 8. The proportion of individuals between twenty and thirty years of age, M. Moreau found to be very nearly the same in each country of Europe—forming one-sixth of the population. In Paris, they constitute one-fifth of the population. It is at this period of life that man is best enabled to resist the causes of destruction. Of persons between thirty and forty years, is composed one-seventh of the population of France and Sweden, and one-eighth of that of England and Scotland. One-eighth of the population of France, and one-ninth of that of England, consists of individuals between forty and fifty years of age. In France the proportion of persons between fifty and sixty is as 1 to 11; in England, as 1 to 15. France possesses a greater proportion of individuals between sixty and eighty than England, while the proportion of those between ninety and one hundred is the greatest in England. M. Moreau found that the number of those between sixty and seventy years was twice as great in Paris as in London, and that of individuals between ninety and one hundred, the proportion was six times greater in London than in Paris. M. Moreau therefore concludes that the active population, or that composed of individuals between fifteen and sixty years of age, constitutes in France two-thirds of its inhabitants, while in every other European state it forms but one-half. Hence it results that France, from an equal population, is able to bring into the field more soldiers by one-eighth than England.

According to the last census, we find that in the city and county of Philadelphia, those under twenty years of age bear to the entire population the proportion of 1 to 2; in the city proper, of 1 to 2.4. Those under five years, in the former, a proportion of 1 to 7; in the latter, of 1 to 8.8. Those between twenty and thirty years, a proportion of 1 to 5 in the whole county; in the city, only, 1 to 4.9. Those between thirty and forty years, a proportion in the first of 1 to 7.5; in the last, of 1 to 8.4. Those between forty and fifty in the entire county, are in the proportion of 1 to 13; in the city alone, in the proportion of 1 to 14.4. Persons between fifty and sixty years bear a proportion to the population of the whole county, of 1 to 24; of the city merely, of 1 to 25. In the county, the individuals between sixty and seventy, are as 1 to 43.6; in the city, as 1 to 46. To every 346 individuals of the whole county, and every 319 of the city, there is one between 80 and 100. These calculations have reference only to the white population of Philadelphia.

We learn from an Edinburgh periodical, that at a recent meeting of the Royal Society of that city, a curious paper by Dr Duncan was read on the injection of air into the cavity of the chest in certain diseases affecting its viscera. A case was related. The patient had suffered much from an affection of the heart, and he

was led to think that the pressure of a small volume of air internally might be substituted for an external pressure which afforded him relief. The patient became his own operator; he employed a fine silver tube about as slender as a common pin, to which a bladder was attached, containing atmospheric air. The point of this was thrust through the skin and other integuments, till it reached the cavity of the chest, and the air was then forced through it by compressing the bladder. Relief was always experienced at the time, and a lasting improvement was effected in the patient's health. Very full details were given of the experiments, which were continued through the space of two or three years. Dr Lizars stated that he had performed the same operation upon four or five patients in cases of aneurism, always with some immediate benefit, and in no case with any ultimate injury. The apparatus with which the first patient operated was shown, and all doubts as to the perforation of the tube were removed, by blowing air through it into water. The experiment is curious in a physiological point of view, for if air can be conveyed into the chest in this manner, other elastic and inelastic fluids might be injected in the same way. And may it not be possible to extract fluids from the interior of the body by reversing the process?

We give the whole of the above just as we have found it in the foreign journal, without comment.

PHILADELPHIA MEDICAL SOCIETY.

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In the review of Dr Gross's work on the Bones and Joints, contained in our last number, page 114, it is stated, "that the idea of employing pressure in the axilla, as a means of counter extension, had long been abandoned by American surgeons, until revived by Dr Gibson in his modification of Hagedorn." This Dr Gibson wishes us to correct, as he declares it to be an error, and one, he remarks, which I have always taken great pains in my lectures to prevent the pupils from falling into, and have, moreover, stated explicitly the contrary in my text book, as the subjoined extracts will show.

"Counter extension then is made upon the *acetabulum of the sound side*, and extension upon the angle of the injured limb, which, so long as the two feet are kept upon the same level, cannot be shortened, provided rotation of the pelvis be prevented. This purpose is answered by extending the splints to the arm-pit on each side, and not with a view, as might be supposed, of producing counter extension from these points."—*Gibson's Surgery*, vol. i, p. 349. *Second Edition*.

MIAMI UNIVERSITY. MEDICAL DEPARTMENT.

The Board of Trustees of Miami University announce, that they have established in Cincinnati a Medical Department, which will go into operation the ensuing autumn.

The following gentlemen compose the Faculty:

DANIEL DRAKE, M.D. (Late Professor in Transylvania University and Jefferson Medical College,) Professor of the Institutes and Practice of Medicine, and Dean of the Faculty.

GEORGE M'CLELLAN, M.D. (Professor of Surgery in the Jefferson Medical College,) Professor of Anatomy and Physiology.

JOHN EBERLE, M.D. (Late Professor of Materia Medica in Jefferson Medical College,) Professor of Materia Medica and Botany.

JAMES M. STAUGHTON, M.D. (Late Professor of Surgery in the Columbia College,) Professor of Surgery.

JOHN F. HENRY, M.D. of Kentucky, Professor of Obstetrics and the diseases of Women and Children.

THOS. D. MITCHELL, M.D. of Philadelphia, Professor of Chemistry and Pharmacy.

JOSEPH N. McDOWELL, M.D. of Cincinnati, Adjunct professor of Anatomy and Physiology.

We regret that unavoidable circumstances have prevented us from inserting in the present number a notice of the very valuable work of Dr Darrach on "The Anatomy of the Groin."

By a mistake, the name of Dr W. S. W. Ruschenberger was incorrectly printed in our last number, page 242.

Dr W. C. Brewster has been appointed by the Governor, Physician to the port of Philadelphia.

University of Maryland.—A vacancy having happened in the Professorship of Anatomy, in the University of Maryland, there will be a meeting of the trustees on the first Monday of June next, for the purpose of appointing a Professor to that Chair.

It is with regret, that we announce the death of Dr DE BUTTS, Professor of Chemistry in the University of Maryland, who died on the morning of the 5th of April, of Pneumonia.

In the Boston Medical and Surgical Journal, Vol. iv, No. 7, it is stated that "Dr. Ruan, a Parisian physician, in a communication to Professor Hufeland of Berlin, states that he has succeeded in (relieving) some distressing cases of incessant itching of parts of the body covered with skin of very delicate structure, by the exhibition of the balsam copaiva."

Now the fact is, Dr Ruan is a highly respectable practitioner of Philadelphia, and his communication on the efficacy of balsam copaiva, in pruritis of the vulva, appeared originally in a former number of this Journal.

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